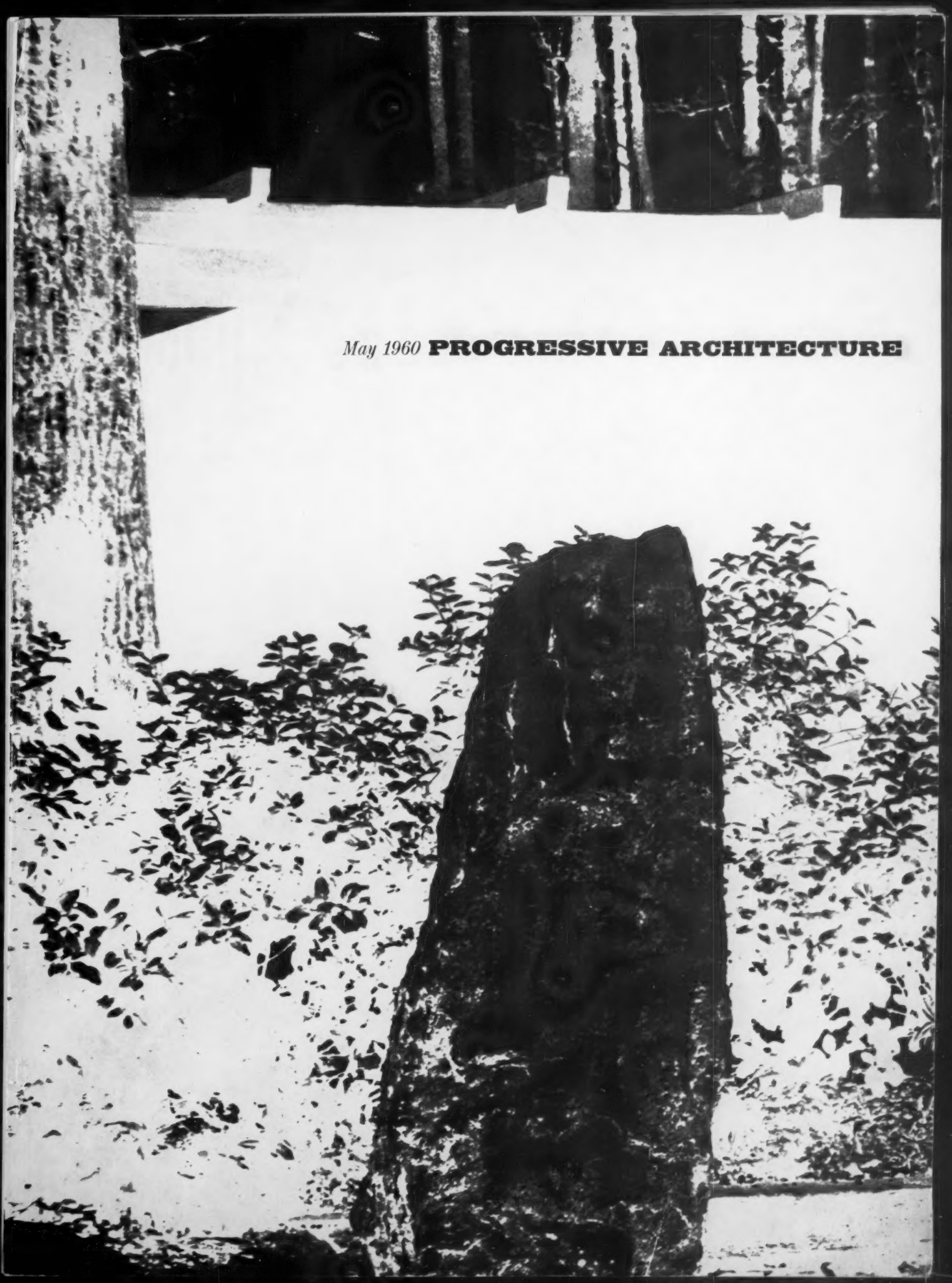
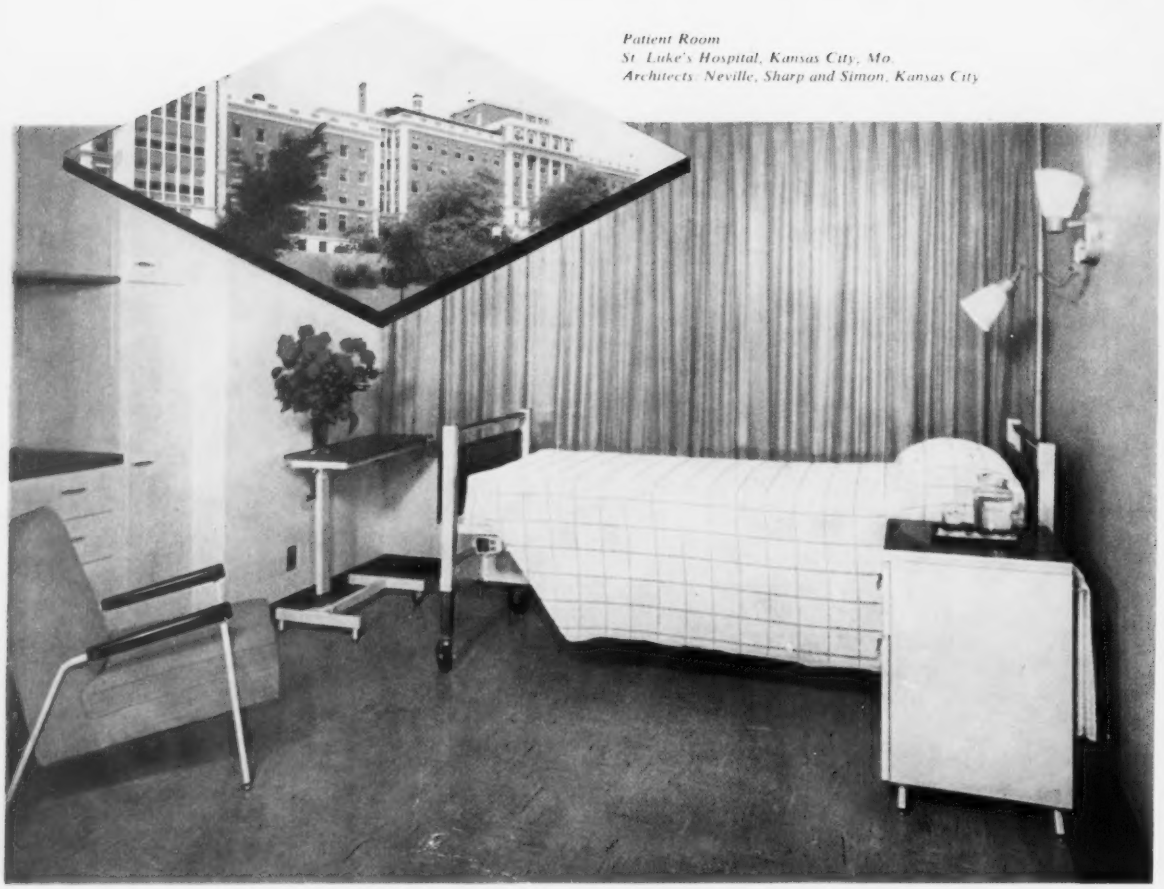


May 1960 **PROGRESSIVE ARCHITECTURE**



Patient Room
St. Luke's Hospital, Kansas City, Mo.
Architects: Neville, Sharp and Simon, Kansas City

Vina-Lux® floors serve St. Luke's Hospital

More and more architects across the nation are specifying Vina-Lux vinyl asbestos tile because . . .

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For complete specification data and color chart, consult Sweet's Architectural File or write us.

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NEW WALL COVERING...

Northern Light

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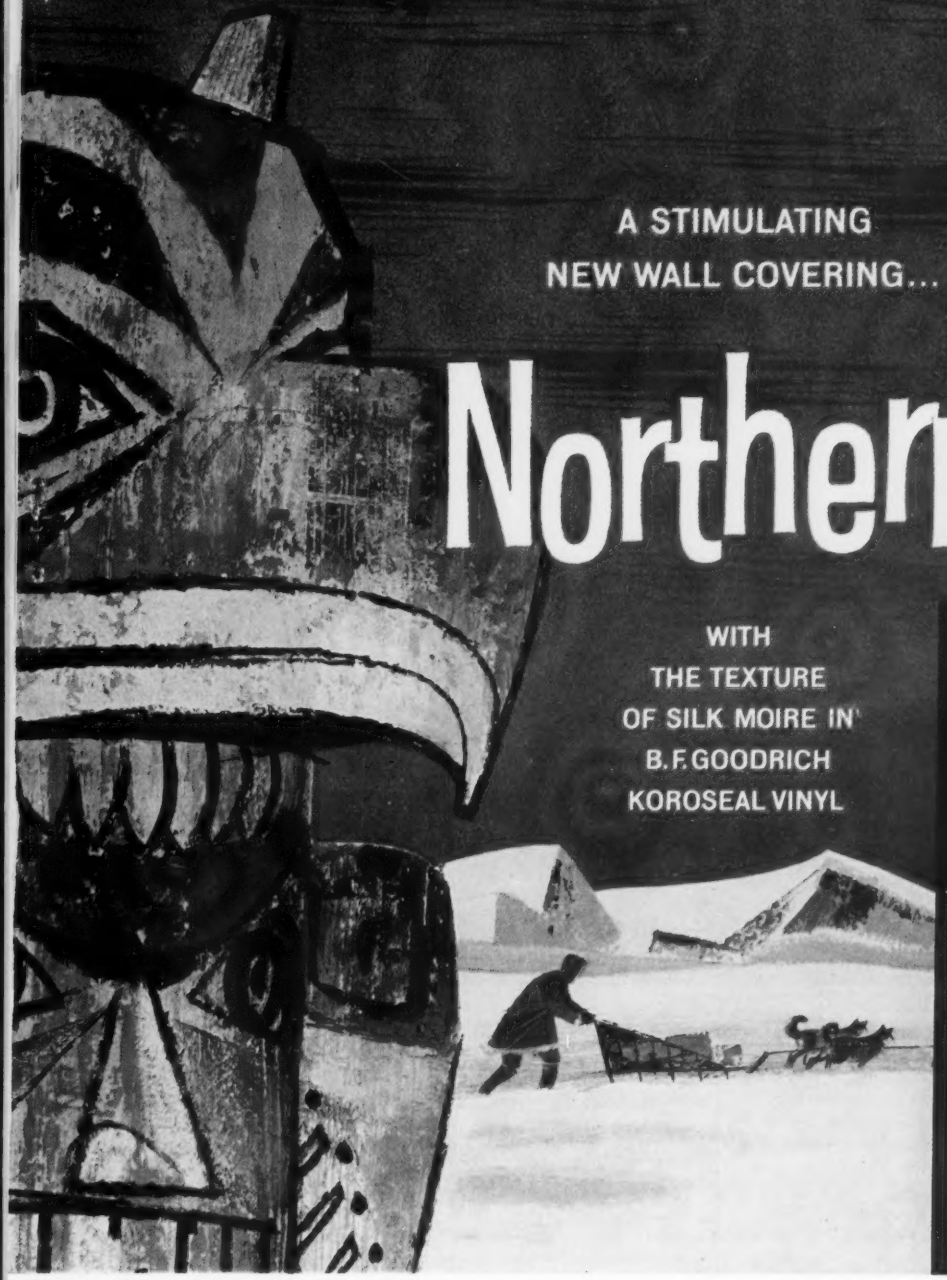
B.F.GOODRICH
KOROSEAL VINYL



Northern Light, latest wall covering pattern in B.F.Goodrich Koroseal fabric-backed vinyl, can be your pace-setter in establishing any number of exciting decors. You'll use this unusual new pattern to add a touch of the Aurora Borealis, jet trails, clouds, or whatever your imagination dictates. See our complete line in Sweet's or, for sample swatches of Northern Light, write Dept. PA-5. *B.F.Goodrich Industrial Products Company, Marietta, Ohio.*

Northern Light pattern shown at top 1/4 actual size—(available in 16 decorator colors).

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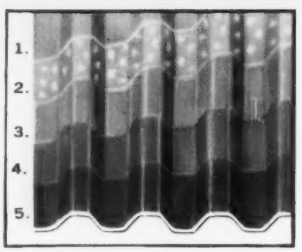
B.F.Goodrich

Get two-way corrosion resistance plus greater

VIN-COR...new vinyl protected

Granco Vin-Cor is a new concept in protected metal —corrugated steel panels protected on both sides by a generous galvanized coating, plus a tough three-coat vinyl finish. *Permanent protection* against weathering and corrosive atmospheres. *Permanent color* proved by Weatherometer tests. Vin-Cor's durable vinyl surface requires no maintenance. Won't craze, chip or peel. The zinc coating provides important secondary galvanic protection when Vin-Cor is drilled or cut.

Granco Vin-Cor is made from tough-temper steel. Strong. You can specify lighter gages than ordinarily required or use fewer supports. Reduce costs. Vin-Cor is classified noncombustible by NFPA Std. No. 220.



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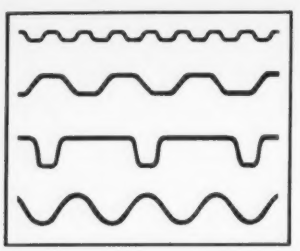

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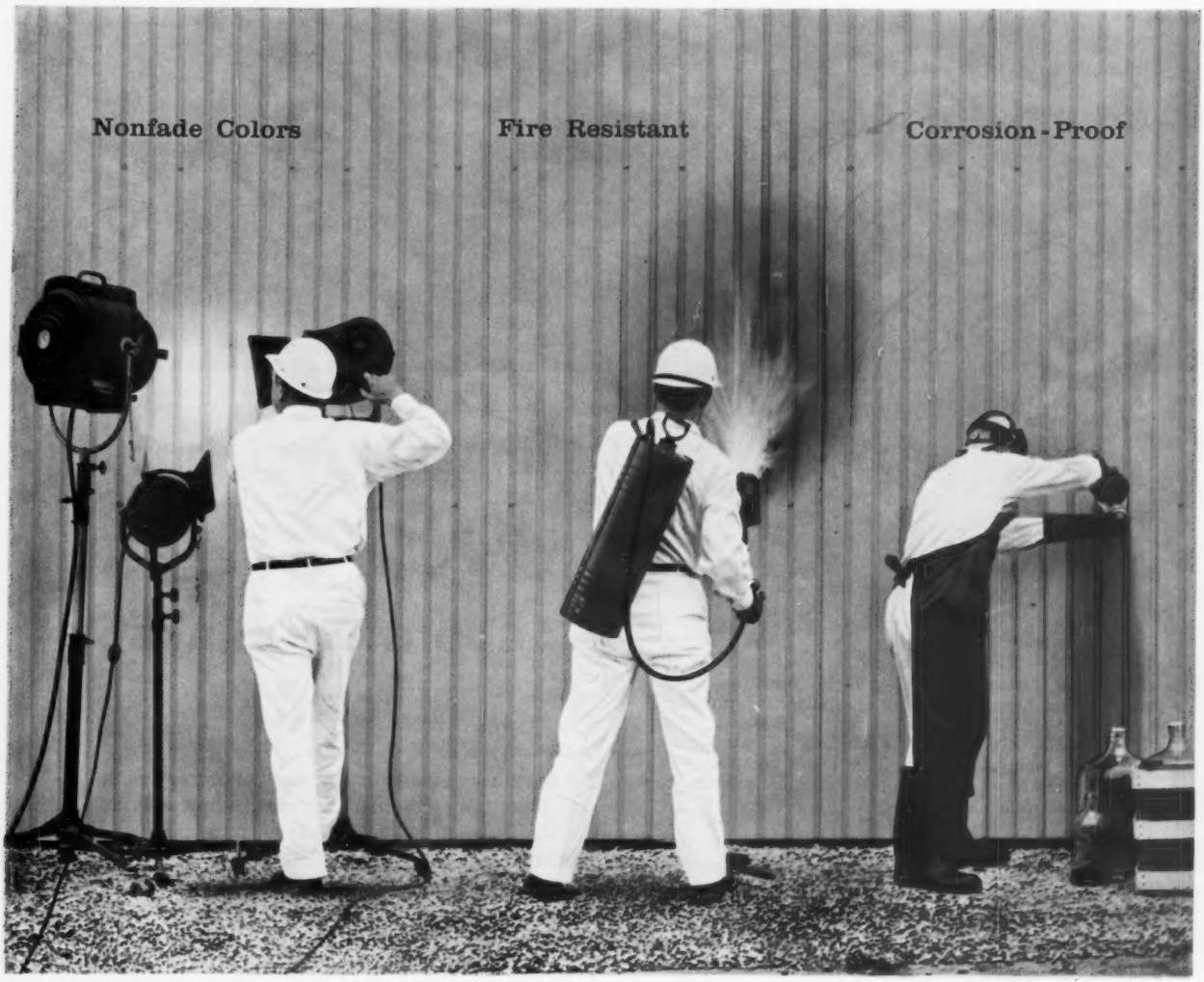
galvanized steel panels



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unusual test, but

Durcon®

Laboratory Sinks took it!

To prove ruggedness of Durcon Laboratory Sinks, one laboratory conducted a test, admittedly unusual, in which steel horseshoes were pitched at and into the sink from a distance of thirty feet. The sink survived with only a few scratches which were quickly smoothed out with emery paper and an oily cloth.

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DESIGN—Clean, modern, practical with coved corners and dished bottoms makes them highly functional and attractive plus blending with all laboratory furniture.

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71 NEWS REPORT

A dramatic police-administration building by Geddes, Brecher & Qualls and a high school by Paul Rudolph, both of precast concrete, Meyer Katzman's imaginative proposal for New York's most congested area . . . The design chairman of the 1964 World's Fair in PERSONALITIES . . . A synagogue by Yamasaki in BULLETINS . . . WASHINGTON/FINANCIAL NEWS . . . Eames's multiple seating in PRODUCTS . . . MANUFACTURERS' DATA.

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The windows in the new East High School in Rochester, N. Y., were chosen with *winter* in mind.

All projected and hopper ventilating windows contain Schlegel Woven Pile Weatherstripping. Schlegel's dense pile of soft wool fibres adjusts to all uneven surfaces—snugly cushions every window. Its resilience—a property not found in plastic or metal—assures a positive seal.

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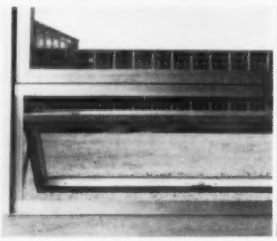
Cuts maintenance costs. Here's why you're sure of winterproof windows when you specify windows with Schlegel Weatherstripping. Schlegel Woven Pile won't rust, crack, or rot. It is designed to last as long as the unit it seals.

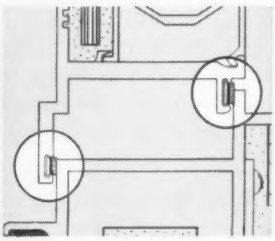
Dow Corning silicone treatment makes it extra water-resistant—locks out howling winds, driving rain, snow, and sleet.

For a list of manufacturers using Schlegel Weatherstripping, write for our new booklet, "Your Guide to Windows—Doors—Screens," or see our insert under "Windows-Screens" and "Doors-Screens" in the 1960 Sweet's Catalog File.

East High School, Rochester, N. Y., anticipates the city's population growth. Built to accommodate 3000 students. Architects: Faragher & Macomber.



All projected and hopper style windows are weatherstripped with Schlegel deep woven pile to insure a positive seal.



Drawing, courtesy of Adams & Westlake, showing application of Schlegel Woven Pile Weatherstripping.

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How much fire protection should a floor-ceiling assembly provide?

Many specifiers doubt that there ever is a real question of how fire resistant a floor-ceiling assembly should be. They know that to provide less protection than that required by local codes is illegal. And they believe that extra protection not only "over protects" a building, but also automatically costs more.

local building codes should be minimum standards

However, recent experience has shown that local code requirements should be *minimum* standards and that additional fire protection need *not* cost more. Consider the example of Armstrong Acoustical Fire Guard, the only acoustical ceiling tile to offer rated fire protection to the structural components of a building.

when one-hour construction is required

Where only a one-hour rating is required in incombustible construction, you can have Acoustical Fire Guard with a *two-hour* rating at little, if any, extra cost. In such cases, Acoustical Fire Guard means (1) a safer building, (2) possible reductions in fire insurance premiums on the building and its contents, and (3) unlimited accessibility to the area above the suspended ceiling.

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when no time-design rating is required

When no time-design rating is required, Acoustical Fire Guard gives you rated fire protection *plus* all its advantages as a superior ceiling material. It has excellent sound absorption. It is available in three attractive designs. It offers excellent resistance to room-to-room sound transmission (particularly important where ceiling-height movable partitions will be used). It poses no maintenance problems. And Acoustical Fire Guard costs little, if any, more than a regular suspended mineral tile ceiling.

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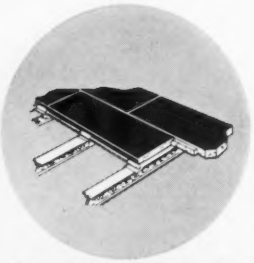
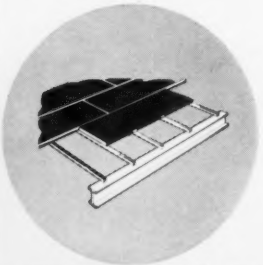
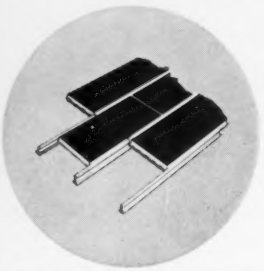


Tectum Roof Deck Planks clip to joists at each crossing. T & G edges give strength, tight joints.



Tectum Box Section Roof Deck Assembly combines roll formed sub-purlins and Tectum planks for speedy erection, lateral strength.



Tectum Tile for bulb-tee systems provides rabbeted edges for secure grout seal and solid anchorage.

Tectum's time-saving trio of roof deck systems provides the fastest possible methods to install a roof deck, finished ceiling, insulation and acoustical treatment. Basic features illustrate why. Tectum, with insulating, acoustical and structural qualities, provides single material economies that cut costs, save time, save materials.

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Washington Elementary School, Bridgeville, Pennsylvania

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Pittsburgh 28, Penna.	Pittsburgh 20, Penna.	Pittsburgh 3, Penna.

In speaking of the use of RIGID-tex Metal for the curtain walls, the architects stated that of the many advantages, two were of special importance on this school job; one, at a distance RIGID-tex Metal panels have a much flatter appearance than plain metal panels, and two, the texture of the panels will tend to absorb any minor indentations or damage that might result from the natural activity of the children playing in the general area of the building.

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See Sweets Architectural File 6c/Ri.

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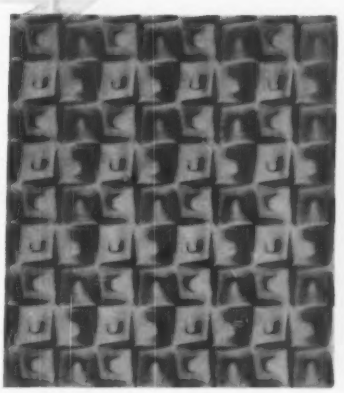
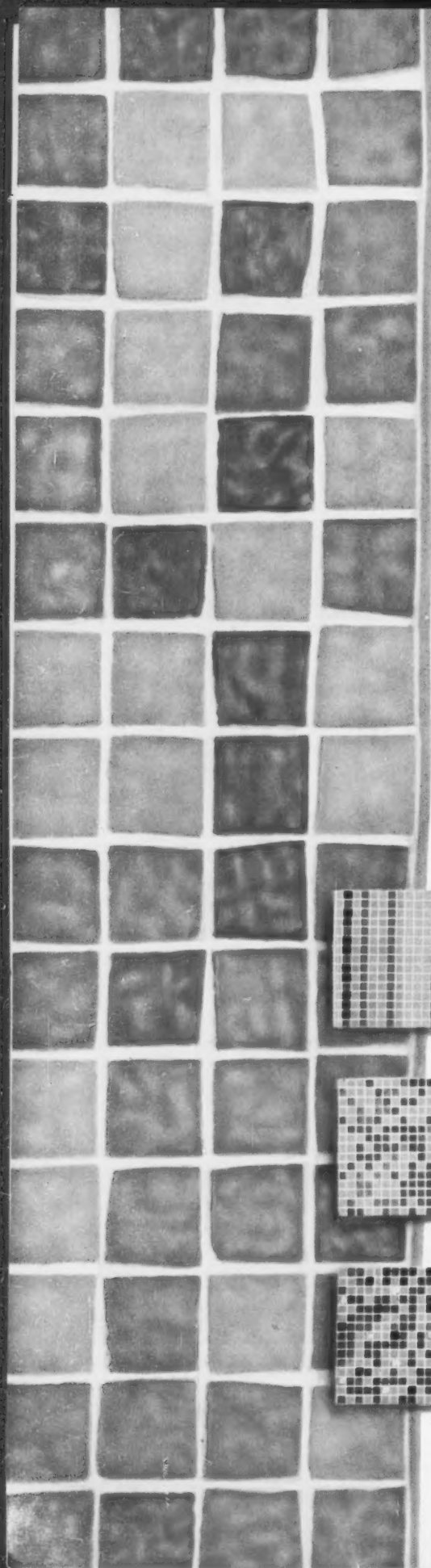


RIGID-tex Metal, Pattern 1-RL, porcelain enameled by Caloric Appliance Corp., Topton, Penn. More than 45 standard patterns available in any metal, any color.



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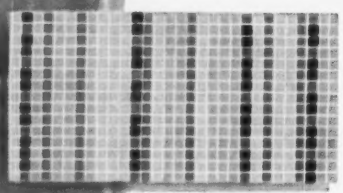
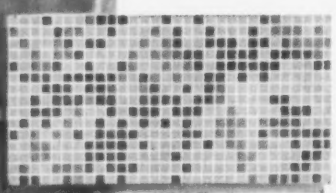


Design No. M-13



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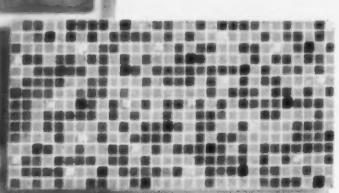
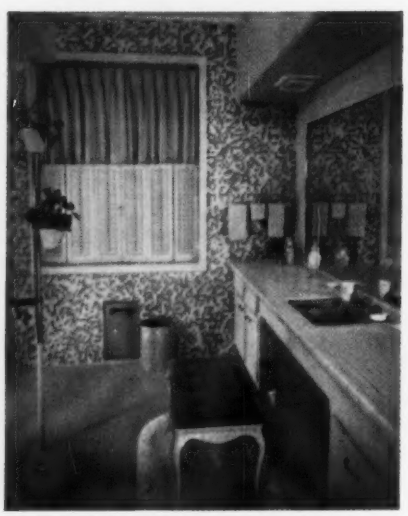


Design No. M-11

Design No. M-5
Actual size tiles



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Architects: Emerick, Albert & McGee

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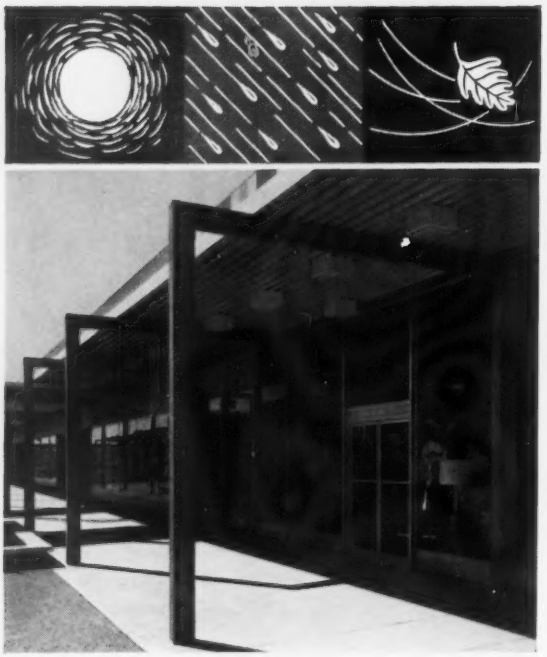
Design No. M-2
Actual size tiles



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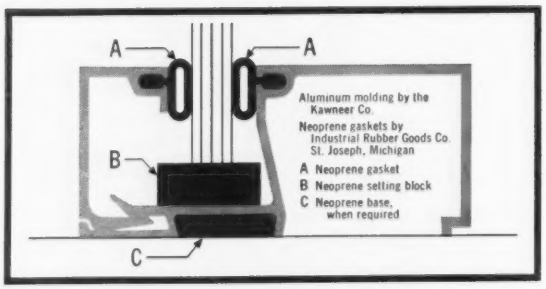

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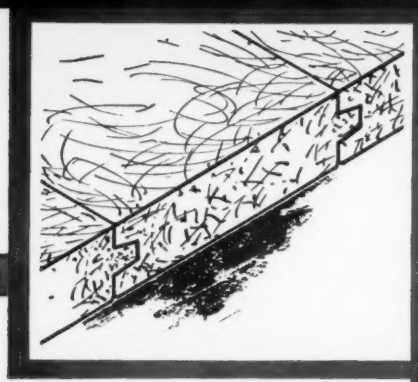
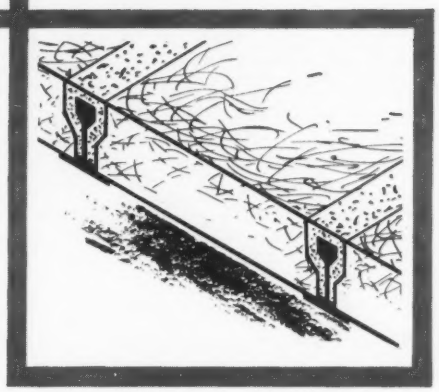


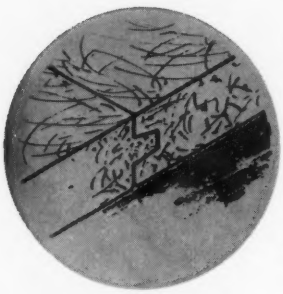
THE INTERLOCKING JOINT

NEW



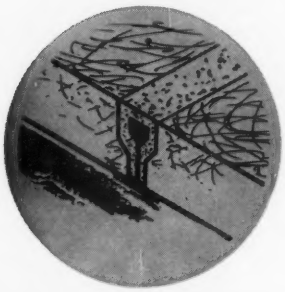
CHAMFERED EDGE

from FLINTKOTE INSULROCK®



NEW from Insulrock – The Interlocking Joint for joist and beam construction aligns the roof deck for better appearance and greater strength; makes installation easier, faster; improves insulation; distributes loads over broader area; seals joints against run-through.

Available in standard Insulrock sizes at no extra charge.



NEW from Insulrock–*improved chamfered edges* in sub-purlin construction further increase resistance to uplift; provide continuous structural joints that are sealed against run-through; give joints superior strength for long years of trouble-free service.

for better Roof Decks

Insulrock's positive new advantages in roof deck construction further simplify your selection of the best deck on the market. For ultimate beauty and high light reflectance in exposed, acoustical ceilings . . . for portland-cement-bonded strength . . . for all-in-one efficiency and economy . . . the answer is simple: INSULROCK–*FOR BEAUTY THAT STANDS UP THROUGH THE YEARS.*

Specify these newest Insulrock features for even greater satisfaction with FLINTKOTE INSULROCK Roof Decks

FLINTKOTE

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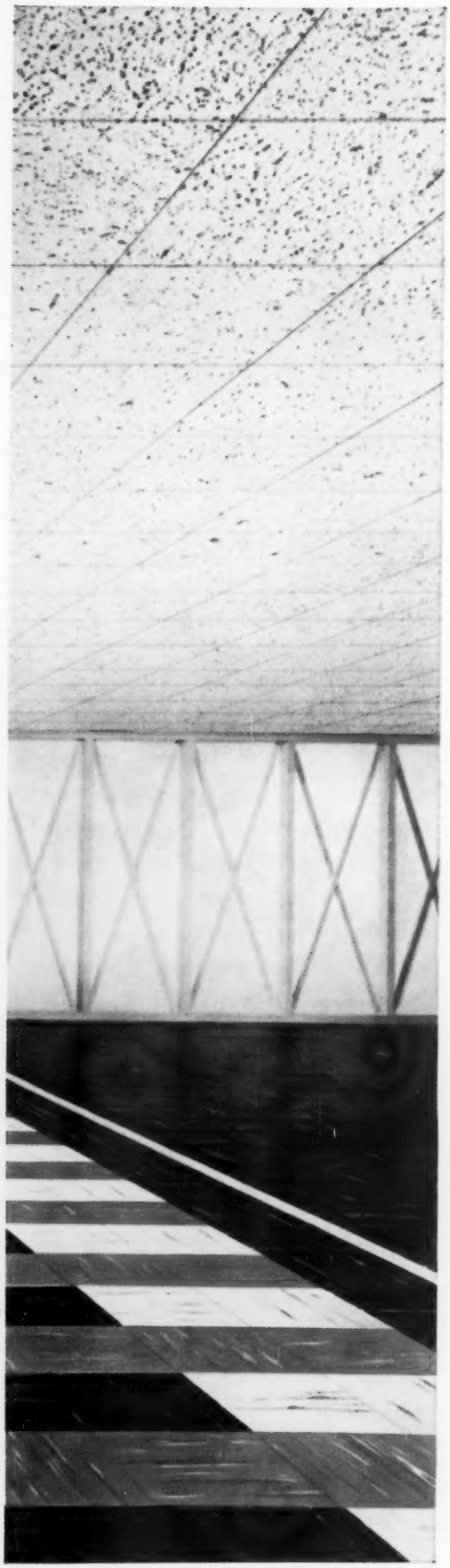
J-M PERMACOUSTIC, USED HERE, IS A FISSURED TILE A FOOT SQUARE MADE OF ALL-MINERAL, NON-COMBUSTIBLE MATERIALS. HIGH STYLE AT A SENSIBLE COST.

J-M TERRAFLEX TILE COLORS USED HERE ARE MALLARD GREEN, PENGUIN BLACK AND HERON WHITE—THREE OF THE MANY STRIKING COLORS AND STYLES AVAILABLE.



Permacoustic and Terraflex are registered trademarks of the Johns-Manville Corporation

CUT OVERHEAD
OVERHEAD

WITH A JOHNS-MANVILLE ACOUSTICAL CEILING. Designed and installed using any of the wide line of units available, a J-M Acoustical Ceiling offers architects the opportunity to combine style and economy with maximum employee efficiency. The big ceiling area shown here is Johns-Manville Permacoustic—a non-combustible fissured unit one foot square. J-M ceilings are adaptable for new designs or re-designs. For full details call your nearest J-M office, or write Johns-Manville, Box 158, Dept. AF-4, 22 East 40th Street, New York City 16. Ask your secretary to get you the new J-M Acoustical Book AC 35A . . . today.

CUT OVERHEAD
UNDERFOOT

WITH J-M TERRAFLEX VINYL-ASBESTOS TILE, you'll find it easy to create a "custom look" beauty. And your clients get a plus value from Terraflex Tile, too. Compared with the next-best type resilient flooring, Terraflex reduces maintenance costs as much as 50% . . . thanks to built-in resistance to greases, oils, alkaline moisture and tracked-in grit and dirt. You can specify Terraflex Tile for use above or below grade—and be sure it will keep its original color beauty. Ask your J-M Flooring Contractor for further details. You'll find his name in the Yellow Pages under "Flooring." Or write Johns-Manville, Box 158, Dept. PA-5, N.Y. 16, N.Y.

J-M 7★

7-Star Value Products

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PATENTED!
All-Steel!
Warp-Proof!
Kennaframe cuts assembly cost. One ready-to-install package saves time and money.
Also available, NEW 1000FA KENNAFRAME Finger Adjusting "Scottie" series—at lowest prices ever, for all-steel frames!

SO EASY NOW...

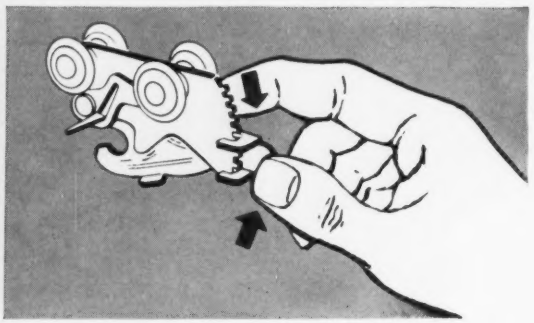
to adjust gliding doors!

NEW KENNAFRAME®

all-steel, warp-proof pocket door assembly with

FINGER ADJUSTING* HANGERS

NO NEED TO REMOVE STOPS, TRIM OR DOOR!
CUTS ALIGNMENT TIME IN HALF!
ENDS COSTLY CALL-BACKS!



NEW 900FA KENNAFRAME "Custom" series, prefabricated assembly for 1″ to $1\frac{3}{4}$″ pocket doors, easily installed by one man in half the usual time. Four screws lock entire unit; simple adjustments for perfect header and jamb alignment. Save time; assure lasting, trouble-free performance. Note ratchet-type adjuster; mere finger-touch permits easy, time-saving alignment. New instant door mounting eliminates millwork. These exclusive features available in pocket and by-passing hardware. Write TODAY for details! Kennatrack Corporation, Elkhart, Indiana. *Pat. Pend.

KENNATRACK®

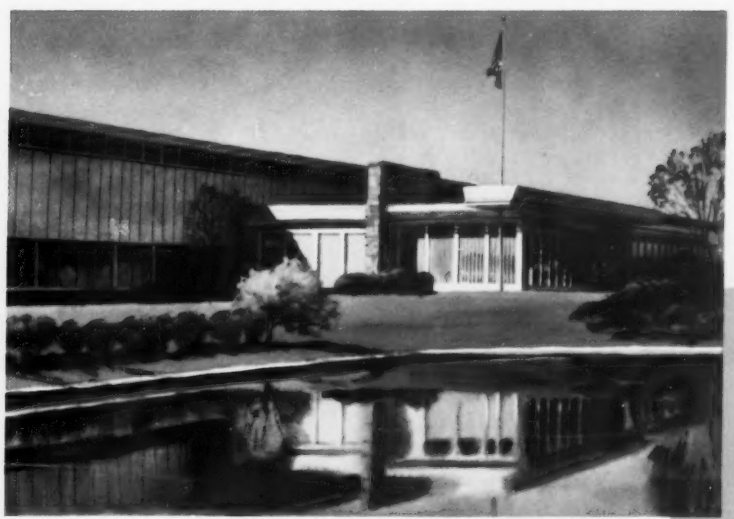
KENNATRACK CORPORATION • Elkhart, Indiana • A SUBSIDIARY OF EKCO® PRODUCTS CO.

Deepfreeze Appliances, Division of Motor Products Corporation. Glazed with approximately 10,000 sq. ft. Hammered Coolite, Glare Reduced on pattern side only. Design and construction by The Austin Company. Waukegan Glass Company, Waukegan, Illinois, Glazing Contractor.

IN *Better* BUILDINGS EVERYWHERE

Today's leading architects are taking fullest advantage of translucent glass. As a result, their outstanding buildings enjoy more and better daylighting per glazing dollar. And figured glass promotes truly functional architecture adapted to today's needs . . . offers a dramatic texture that enhances the appearance of any structure.

Cutler-Hammer, Inc., Lincoln, Illinois. Another award-winning structure in which 13,500 sq. ft. of Coolite, Glare Reduced one side has been installed to daylight adequately the plant of this pioneer electrical manufacturer. Design and construction by The Austin Company.



Square D Company Plant on Goodhope Road, Glendale, Wisconsin. 240 lights of 30" x 60" Coolite Heat Absorbing Glass are glazed around the top rim of the building. Architect: Grassold-Johnson & Assoc., Milwaukee, Wisconsin. Glazing: Pittsburgh Plate Glass Company, Milwaukee, Wisconsin.

SEE OTHER SIDE
for full color photographs of recommended industrial patterns

MISSISSIPPI GLASS COMPANY

88 Angelica Street • St. Louis 7, Mo.

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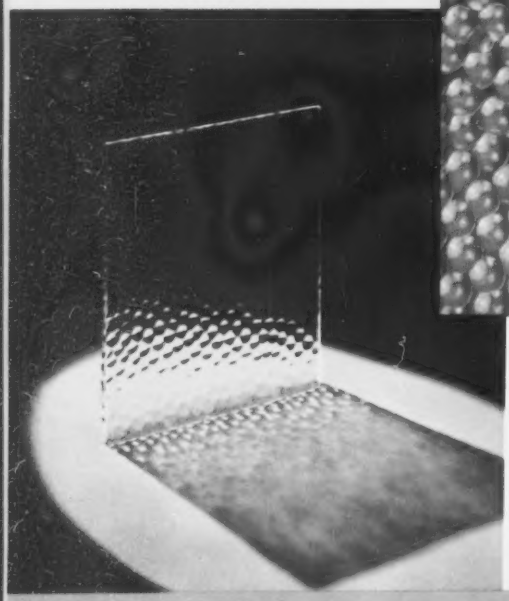
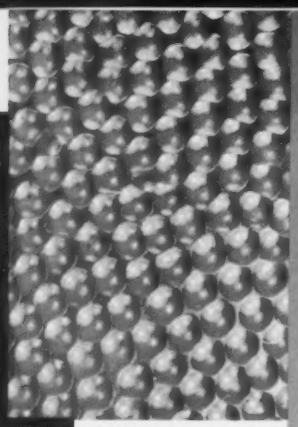
HAMMERED

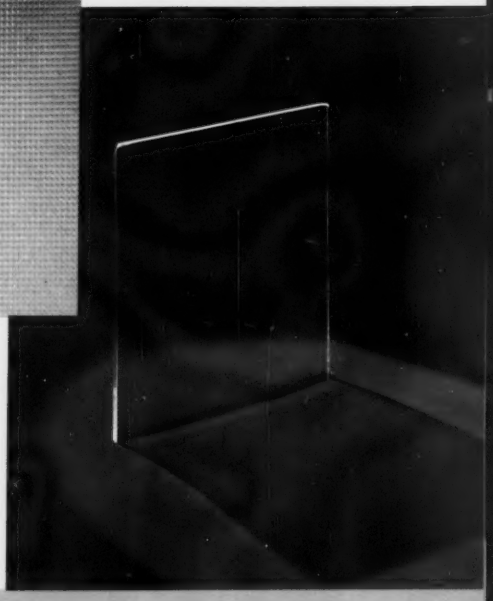




PATTERN ACTUAL SIZE

Available in thicknesses of ⅛", 7/32", and ¼" wired (Hexagonal Mesh)—also ¼" Misco (wired) untreated or glare reduced on one or both sides.

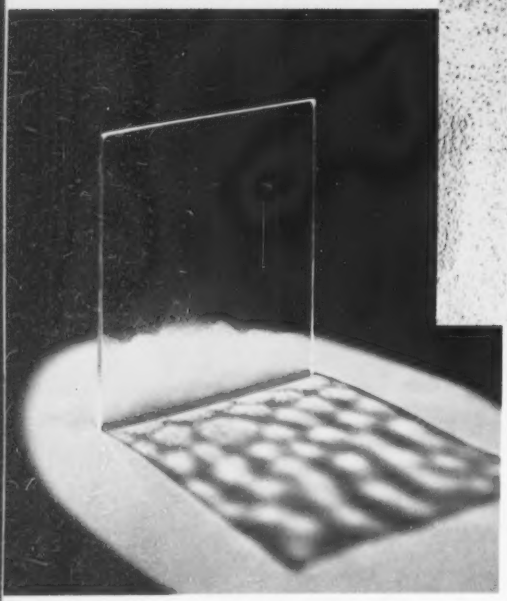
FACTROLITE

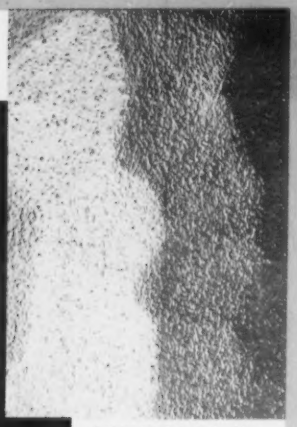


PATTERN ACTUAL SIZE

Available in thicknesses of ⅛", 7/32", and ¼" wired (Misco Wired only). Untreated or glare reduced on one or both sides.

SMOOTH ROUGH®

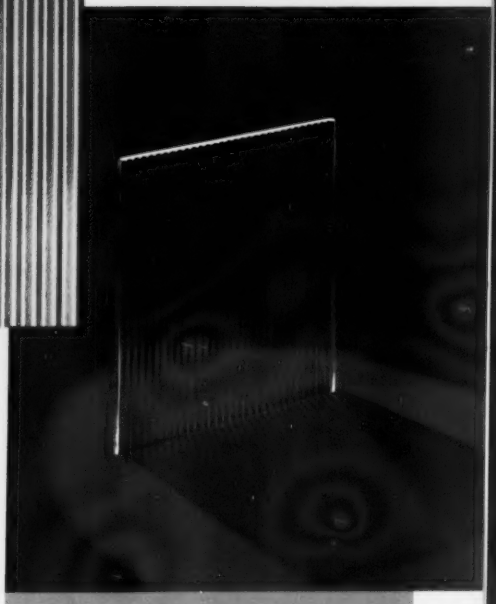




PATTERN ACTUAL SIZE

Available in thicknesses of ⅛", 7/32", ⅜", and ¼" wired (Hexagonal mesh on Pacific Coast only)—also ¼" Misco (wired) untreated or glare reduced on 2 sides only.

PENTECOR



PATTERN ACTUAL SIZE

Available in thicknesses of ⅛", 7/32", and ¼" wired (Hexagonal Mesh). Untreated or glare reduced on one or both sides.

For utility, beauty, and variety unmatched by any other glazing medium, specify Mississippi Glass. Available in a wide variety of patterns, wired and unwired, at better distributors everywhere.

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Contains pattern descriptions, light distribution charts, transmission data. Send for your free copy today.

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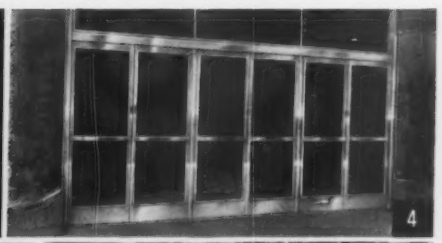
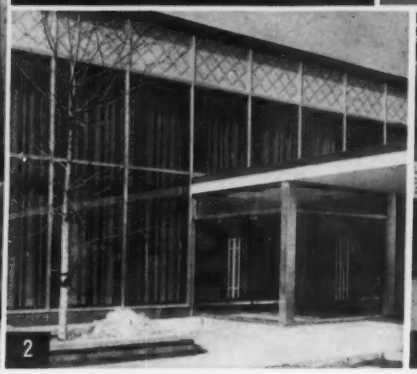
Stainless Steel

In Columbus, Ohio
Stainless Steel Combines Economy and Timeless Beauty

1. **City National Bank and Trust Company**
   Architects: Tully & Hobbs
2. **Mills Restaurant**
   Architects: Benham, Richards & Armstrong
3. **Lazarus Department Store**
   Architects: Benham, Richards & Armstrong
4. **S. S. Kresge Company**
   Architect: Emil G. Jehle (deceased)





In Columbus, architects are utilizing stainless steel's inherent advantages to give the buildings they design timeless beauty at low cost. Long recognized by the profession as a durable building material, stainless steel is assuming a new importance in today's architecture. It is especially suited to modern design concepts and now can be specified at approximately the same cost as less durable metals.

Substantially lower costs for stainless are the cumulative result of several factors: 1. more experience with the metal by fabricators; 2. use of more efficient production methods, such as roll-forming; 3. more effective use of higher strength of stainless and its most economical sizes; 4. quantity production of standard building components; 5. lower-cost grades that adequately meet architectural requirements.

Take advantage of these new opportunities to incorporate the qualities of Armco Stainless Steels in the architecture *you* create.

Write us for your free copy of *Armco Stainless Steels for Architecture*, a design and specification guide for using stainless most effectively. Armco Steel Corporation, 1590 Curtis Street, Middletown, Ohio.

ARMCO STEEL

ARMCO

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Chicago's newest prestige building . . . . . .

The HARTFORD *Building*

new concept in space and dignity . . .

served by *electronically controlled*

Haughton Auto-Signamatic

operatorless Elevator System

Destined to become *the* Chicago landmark, the Hartford Building at 100 South Wacker Drive will provide regal surroundings and facilities for tenants and visitors.

A case in point: thirteen Haughton Operatorless Elevators with the latest automatic electronic controls will speed passengers from floor to floor with silken smoothness. They will be motivated by an amazing electronic brain that anticipates service needs at every moment, day and night, and dispatches cars at the proper times and in proper sequence to meet traffic needs exactly.

Of course, operation of Haughton Operatorless Elevators is simplicity itself. One merely enters the car and presses the numbered floor button. Doors open and close automatically at floor level, with unfailing consideration for passengers. They are controlled by proven devices of ingenious design that help make Haughton Operatorless Elevators the safest mode of floor to floor travel.

The Hartford Building . . . to be occupied in part by the Western Department of the Hartford Fire Insurance Company Group. From its unique exterior, creating a functional design accented by simple charm, to its superb location and superior facilities, this beautifully planned building carries its tasteful design throughout . . . The twenty floors are arranged for purposeful planning and unexcelled utilization of floor space. Windows are shielded from direct sun rays by the canopy effect created in the exterior design, a first in this country . . . The landscaped esplanade and spacious lobby provide an exciting vista, while building features combining the ultimate in fluorescent lights, automatic elevators, year 'round temperature control, under floor ducts for electrical and telephone equipment and other innovations make The Hartford Building an unparalleled office home for any organization.

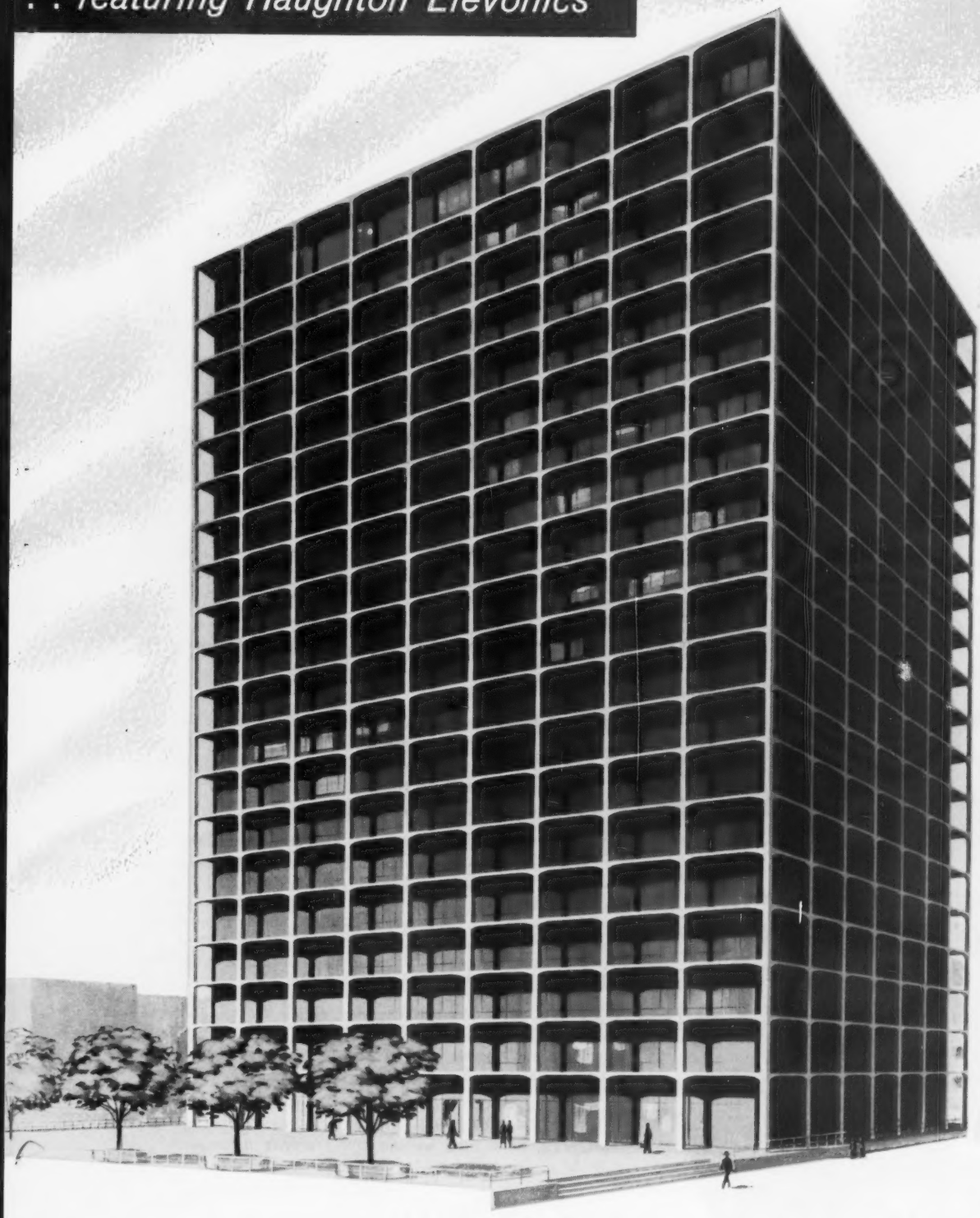
EMBLEM OF EXCELLENCE IN VERTICAL TRANSPORTATION

* *Haughton's advanced program in elevator systems research and engineering, with specific emphasis on the creative application of electronic devices and instrumentation for betterment of systems design and performance.*

Haughton
ELEVATOR COMPANY

DIVISION OF TOLEDO SCALE CORPORATION
Executive Offices and Plant, **TOLEDO 9, OHIO**

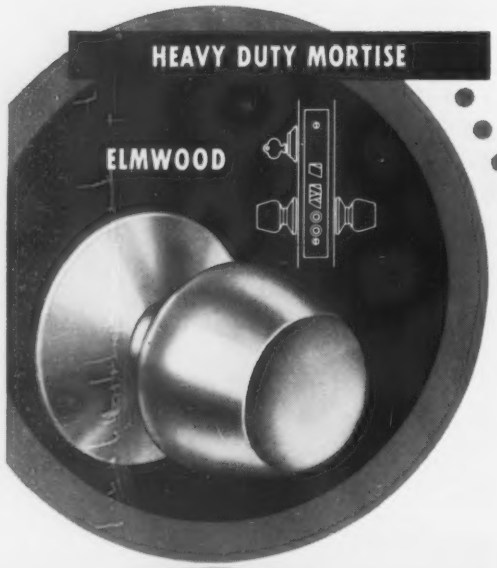
. . *featuring Haughton Elevonics**

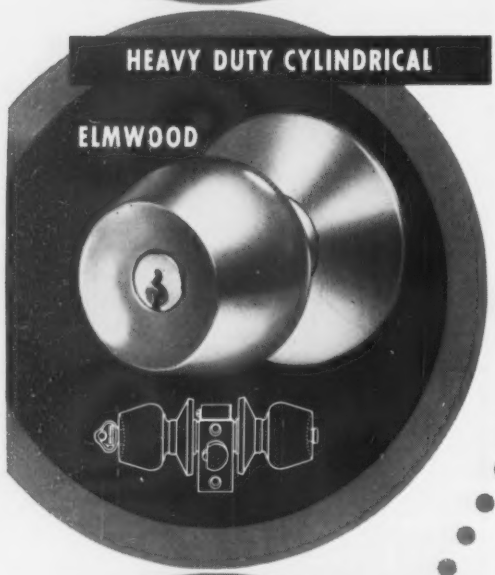


Architects and Engineers:
SKIDMORE, OWINGS & MERRILL

Building Construction:
GEORGE A. FULLER COMPANY

Leasing Agent:
ARTHUR RUBLOFF & CO.





all with matching trim

By specifying LOCKWOOD LOOK-ALIKES you are assured of two important advantages: *First*, a wide choice of types and grades of locks—*all* with matching trim; *Secondly*, the highest quality locksets in the heavy duty and standard duty grades.

HEAVY DUTY MORTISE — *For exterior doors* — "B5100" Series mortise locks in full range of functions and finishes . . . standardized dimensions . . . interchangeable in same mortise . . . anti-friction latch bolts and armored fronts.

HEAVY DUTY CYLINDRICAL — *For entrances to offices, suites, etc.* "H" Series cylindrical locks in full range of functions and finishes . . . standardized dimensions . . . heavy forged brass chassis assures rigid alignment, smooth operation.

STANDARD DUTY CYLINDRICAL — *For closet doors, service doors, etc.* "S" Series cylindrical locksets in full range of functions and finishes . . . can be furnished to interchange in same mortise as "H" Series . . . full ½" throw latch . . . screw-on type roses.

See LOCKWOOD Catalog 18e-LO in Sweet's Architectural File, or a copy will be sent promptly on request.

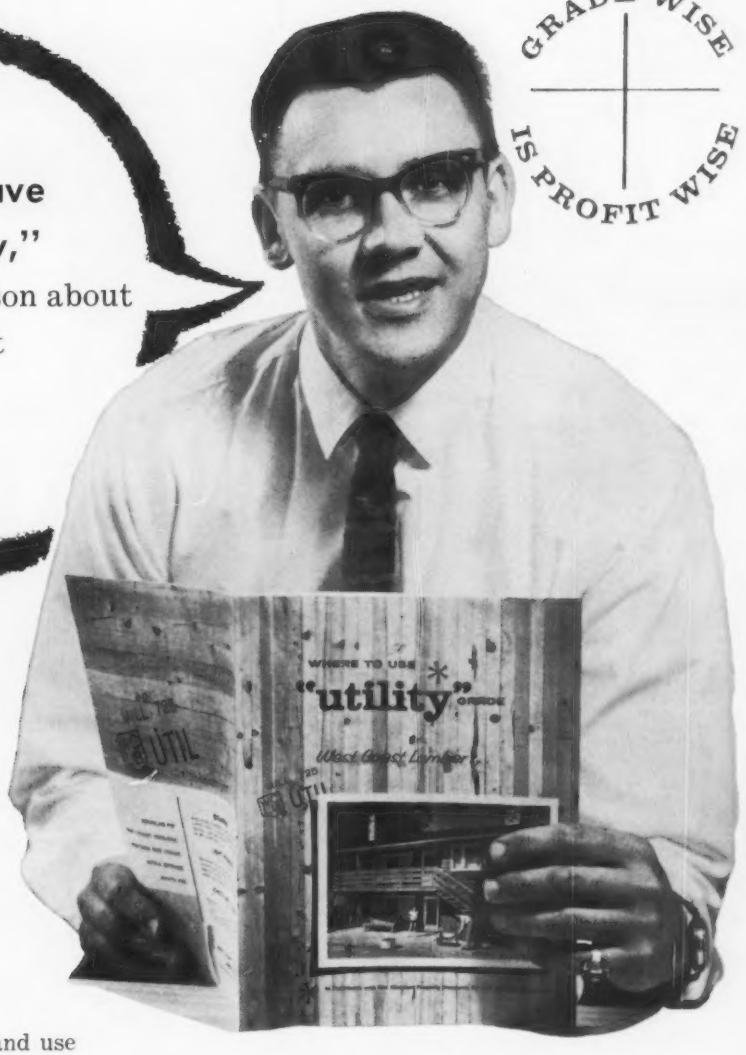
LOCK UP WITH

LOCKWOOD

Lockwood Hardware Mfg. Company, Fitchburg, Mass.

GRADE WISE IS PROFIT WISE

"Easiest Way to Save Money I Ever Saw," says Donald Eilertson about "Utility" grade West Coast framing lumber.*



"It's good management to specify and use Utility grade framing lumber," says Builder Donald Eilertson. "By taking advantage of the economies offered by Utility dimension and boards, I save a minimum of $200.00 on every house job and maintain my reputation for quality construction."

Here is another builder of distinctive homes who depends upon the consistent quality of West Coast "Utility" grade lumber for a profit. You, too, will find "Utility" grade saves money in applications such as these:

	Douglas Fir		West Coast Hemlock	
*	Floor Joists		30 lb. live load*	40 lb. live load†
	2x6	16" o.c.	7'-2"	6'-4"
	2x8	16" o.c.	10'-8"	9'-6"
	2x10	16" o.c.	14'-8"	13'-0"
	2x12	16" o.c.	17'-0"	15'-4"

*sleeping rooms only
†other than sleeping rooms

Other specific applications for "Utility" grade: rafters for light roofing*, flat roof joists*, ceiling joists*, floor joists* and boards* for sheathing, sub-floors and solid roof boarding.

******When used in accordance with FHA Minimum Property Standards for One and Two Living Units, FHA Bulletin No. 300.*

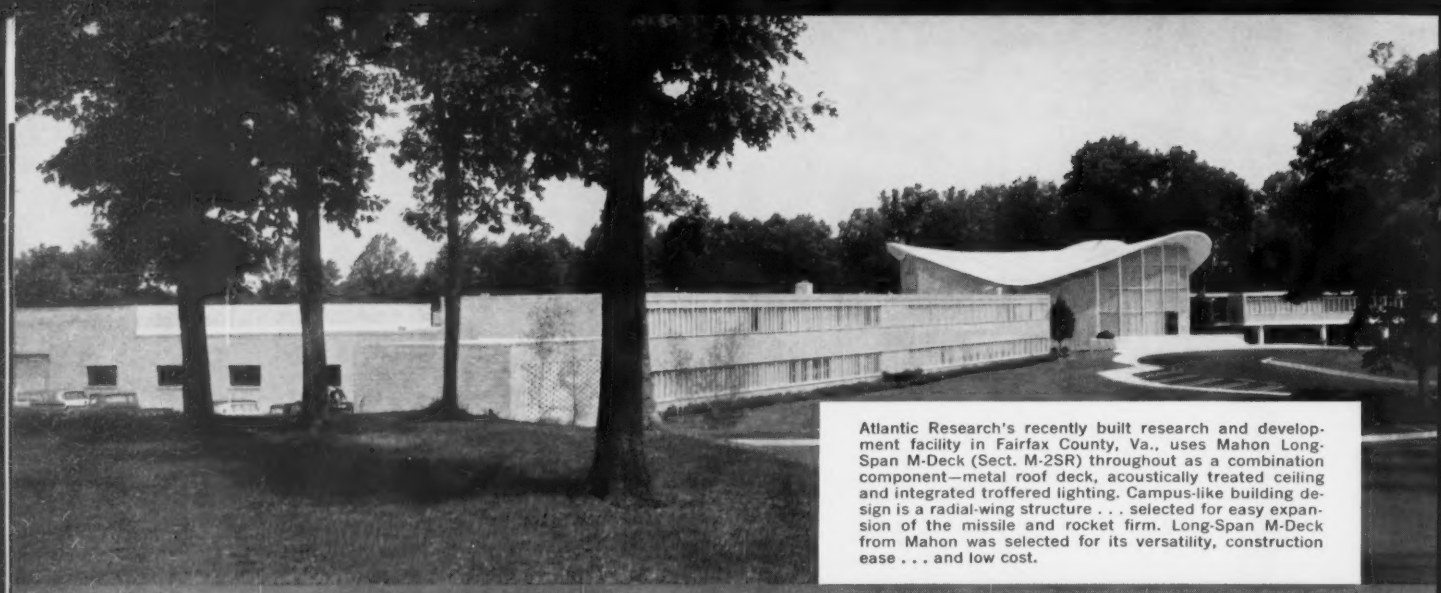
WEST COAST LUMBERMEN'S ASSOCIATION
1410 S. W. Morrison St., Portland, Oregon

Please send me your booklet "Where to Use Utility Grade West Coast Lumber".

Name_____

Address_____

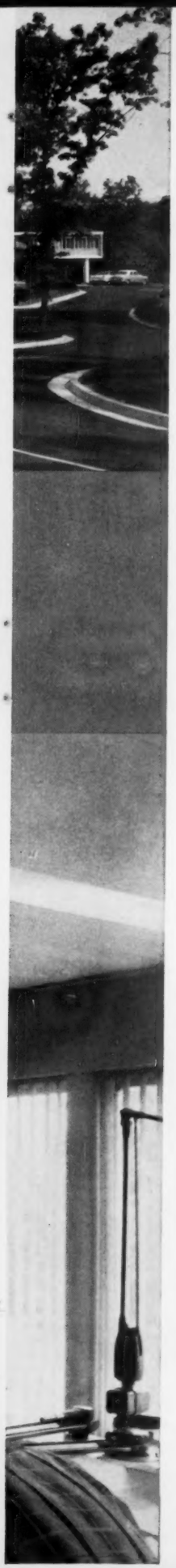
City_____ Zone____ State_____

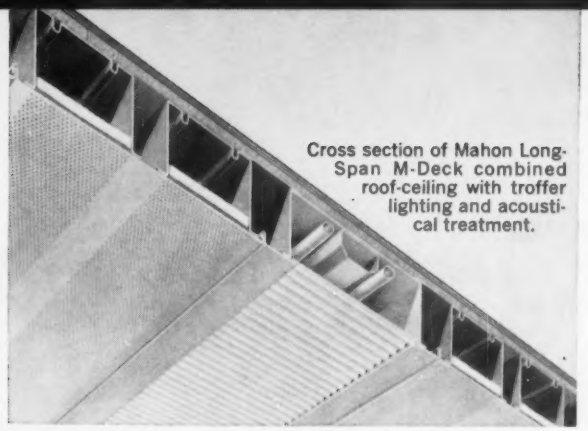


Atlantic Research's recently built research and development facility in Fairfax County, Va., uses Mahon Long-Span M-Deck (Sect. M-2SR) throughout as a combination component—metal roof deck, acoustically treated ceiling and integrated troffered lighting. Campus-like building design is a radial-wing structure . . . selected for easy expansion of the missile and rocket firm. Long-Span M-Deck from Mahon was selected for its versatility, construction ease . . . and low cost.

MAHON MULTI-USE LONG-SPAN M-DECKS

Interior view of one of Atlantic Research's engineering sections showing ceiling side of Mahon Long-Span M-Deck —attractive, functional and noise proofed. Troffer lighting M-Deck sections harmonize with surroundings—provide diffused, glare-free illumination.





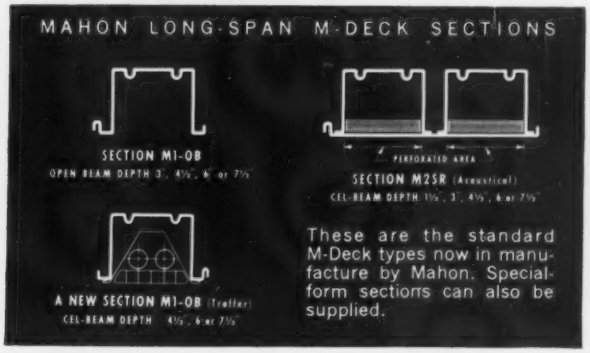
Cross section of Mahon Long-Span M-Deck combined roof-ceiling with troffer lighting and acoustical treatment.

Today, more than ever, architects and engineers are depending on Mahon Long-Span M-Decks as proven, multi-purpose roof sections that provide a combined structural roof deck and ceiling. Now, for less cost than once required for conventional steel roof systems, you can also specify functional ceilings that fit into almost any job.

short-cuts to quality construction —long strides toward cost reduction

These steel sections give you more design and construction advantages . . . (1) adaptability: serving as structural members, roof decks, finished ceiling material—even acoustical treatment; (2) efficiency: high strength-to-weight ratio permits spans from wall-to-wall or truss-to-truss . . . roof beams and purlins can be eliminated; (3) economy: easy handling, fast erection, rapid covering—saving time, labor and material; and (4) flexibility: producing either flat or beamed ceiling surfaces with or without recessed troffer lighting or acoustical treatment, in metal gages and gage combinations to suit your need.

Find out what quality-made Mahon Long-Span M-Decks can do for you . . . your work . . . your costs by talking with your local Mahon architectural representative, consult Sweet's Files or write for information Catalog LSD-60.


MAHON LONG-SPAN M-DECK SECTIONS
SECTION M1-OB
PERFORATED AREA
SECTION M2SR (Acoustical)
A NEW SECTION M1-OB (Troffer)
These are the standard M-Deck types now in manufacture by Mahon. Special-form sections can also be supplied.

MAHON BUILDING PRODUCTS

- Aluminum or Steel Curtain Walls (in natural or colored metals)
- Rolling Steel Doors (Standard or Underwriters' labeled)
- Metalclad Fire Walls (Underwriters' rated)
- M-Floors (Steel Cellular Sub-Floors)
- Long Span M-Deck (Cellular or Open Beam)
- Steel Roof Deck
- Acoustical and Troffer Forms
- Acoustical Metal Walls, Partitions and Roof Decks
- Permanent Concrete Floor Forms

CONSTRUCTION SERVICES

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- Steel Fabrication-Weldments

THE R. C. MAHON COMPANY

Detroit 34, Michigan

Manufacturing Plants—Detroit, Michigan and Los Angeles, California

Sales-Engineering Offices in Detroit, New York, Chicago, Los Angeles and San Francisco.

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SPEEDING AMERICAN CONSTRUCTION WITH METAL BUILDING PRODUCTS, FABRICATED EQUIPMENT AND ERECTION SERVICES

MAHON

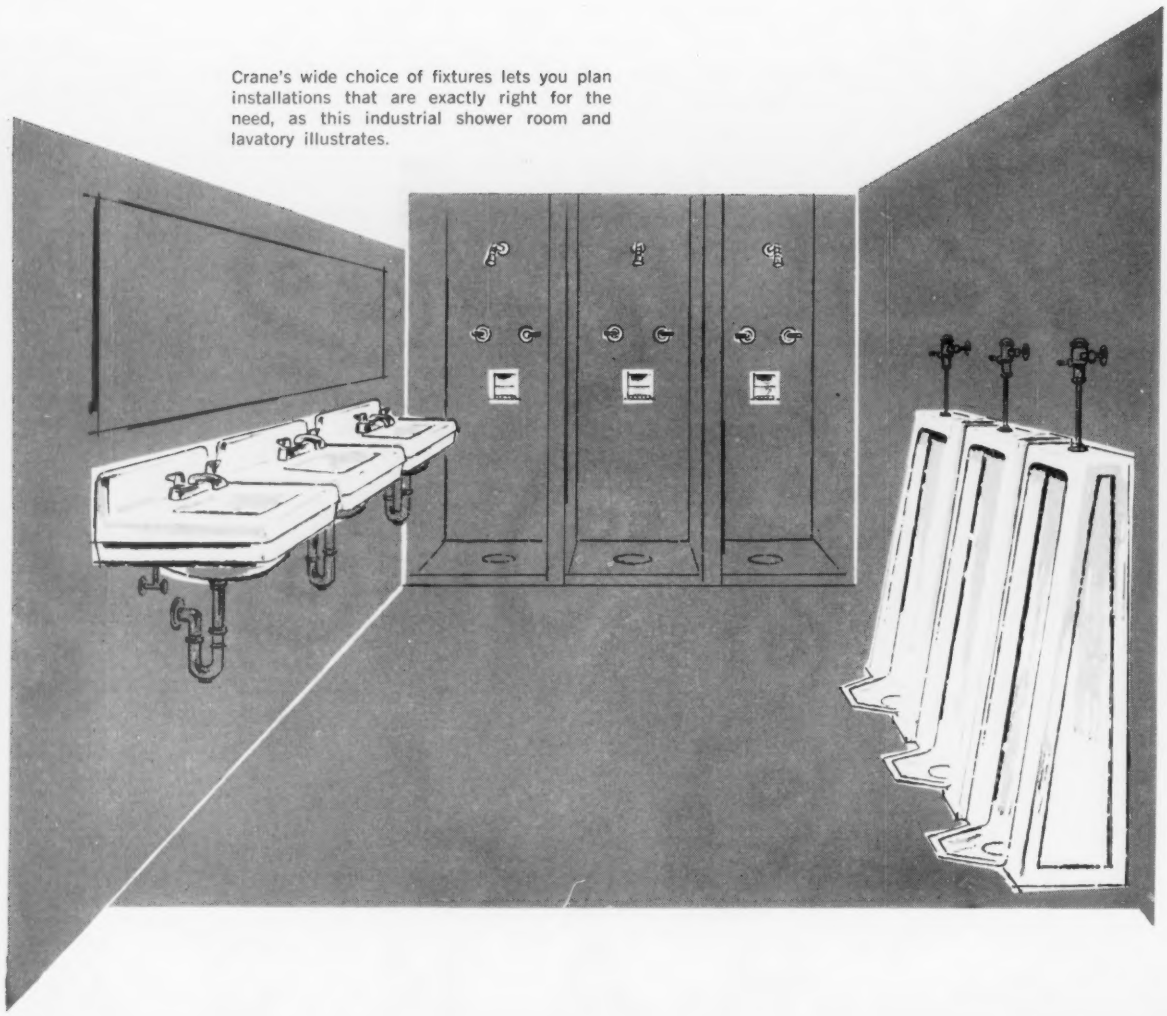
Design proof

into your commercial buildings

at no added cost...

with Crane plumbing

Crane's wide choice of fixtures lets you plan installations that are exactly right for the need, as this industrial shower room and lavatory illustrates.



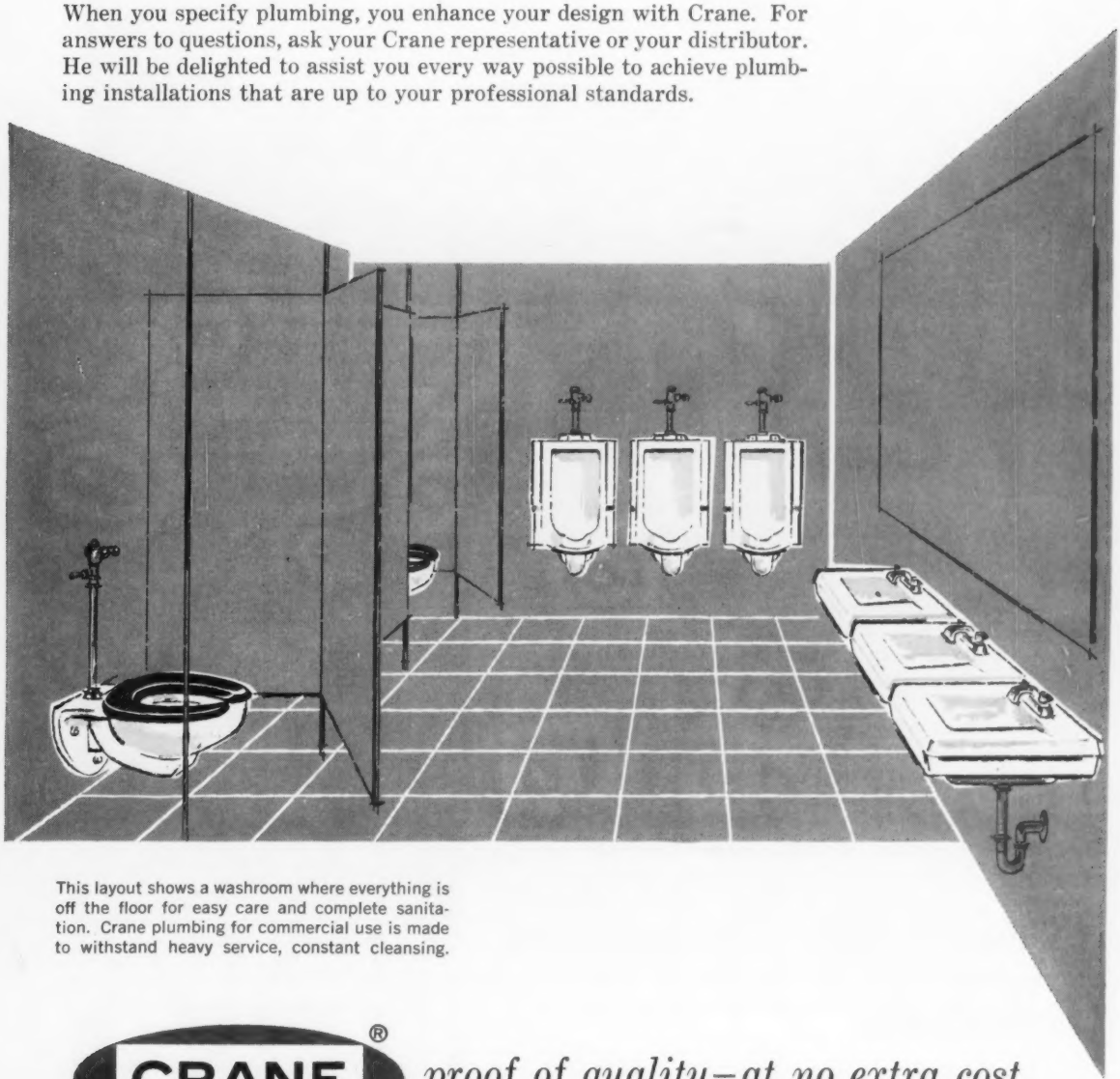
# of quality

When you specify plumbing for commercial buildings, there are two sound reasons for choosing Crane.

1 Crane offers the functional beauty you want and Crane has the reputation for quality among the general public. Crane, therefore, is visible *proof of quality* in commercial buildings . . . and it costs no more.

2 Crane offers the most extensive line of plumbing for public and institutional use. There is a Crane fixture for almost every specialized use. It's engineered to last—even under hard use and maintenance. Cost of owning Crane is extremely low.

When you specify plumbing, you enhance your design with Crane. For answers to questions, ask your Crane representative or your distributor. He will be delighted to assist you every way possible to achieve plumbing installations that are up to your professional standards.



This layout shows a washroom where everything is off the floor for easy care and complete sanitation. Crane plumbing for commercial use is made to withstand heavy service, constant cleansing.

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proof of quality—at no extra cost

Plumbing-Heating-Air Conditioning Group, P. O. Box 780, Johnstown, Pennsylvania

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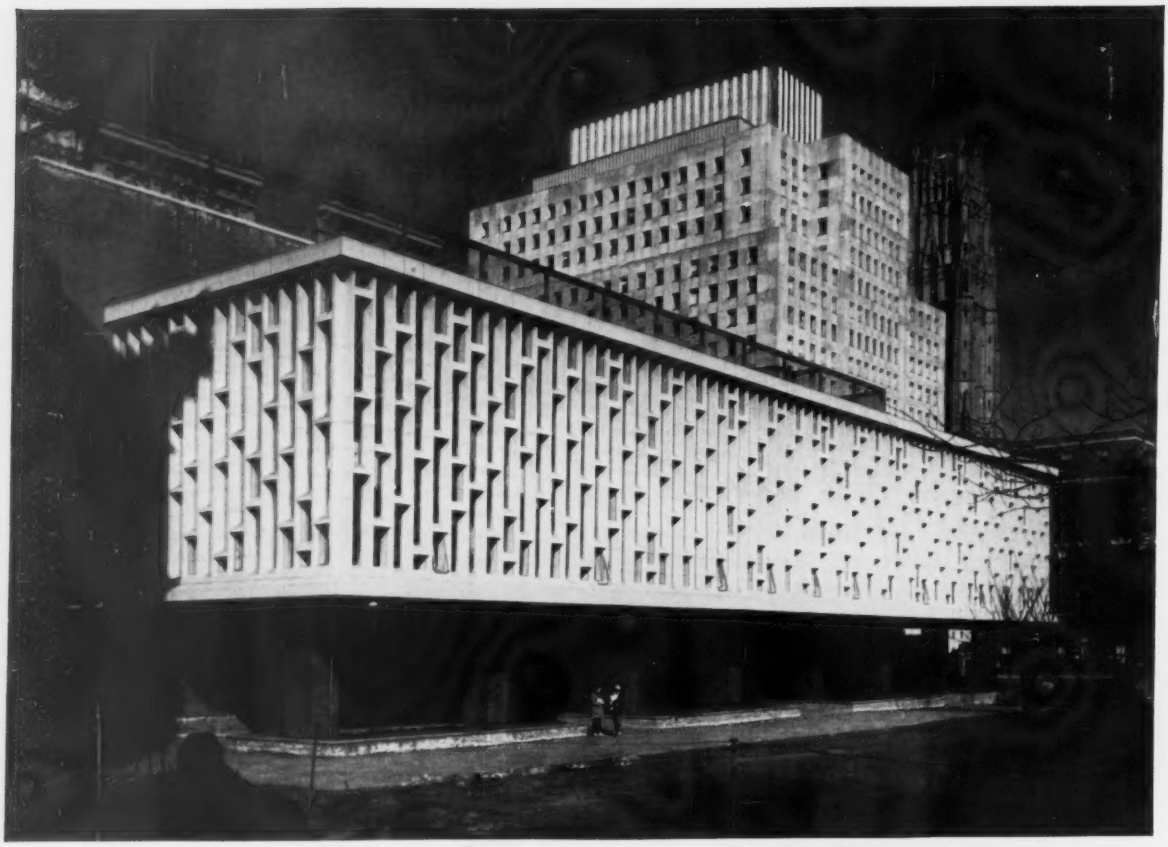
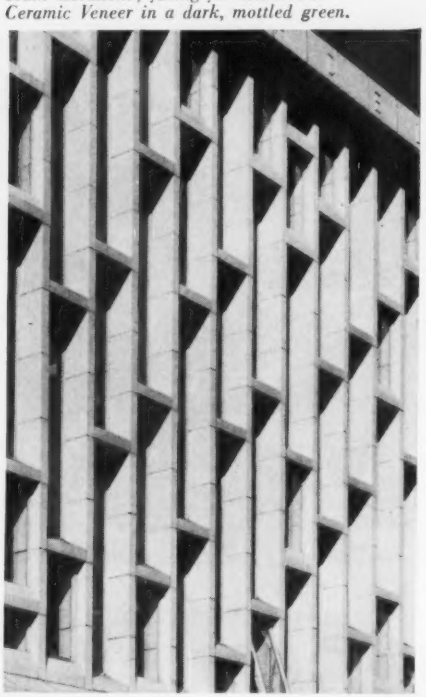


COLLEGE LIBRARY—NEW YORK, N. Y.
O'Connor and Kilham—*Architects*
Robert Glenn Inc.—*Builders*
Ceramic Veneer in oyster white glaze was specified for through-wall grilles on east elevation 28' x 170' with a 34' return on the north and south elevations; facing for columns is Ceramic Veneer in a dark, mottled green.

No need to curtail creativity when you specify Ceramic Veneer

The unrivaled versatility of Ceramic Veneer aids you greatly in solving unusual design problems. Every unit, large or small, for interiors or exteriors, is custom-made to your precise specifications. You can specify sculpture, polychrome panels, plain surfaces or one of the many smart new Federal Seaboard grille designs. And no other time-tested building material offers such a vast selection of colors and textures. Ceramic Veneer can be combined readily for harmony or contrast with all other materials. For new buildings or for modernization, investigate the advantages of Ceramic Veneer—from design-ability to desirability, from initial cost to ease of maintenance. Write today for new solar screen and color guide brochures. Without charge we will gladly furnish construction detail, data, advice and estimates on preliminary sketches involving Ceramic Veneer.



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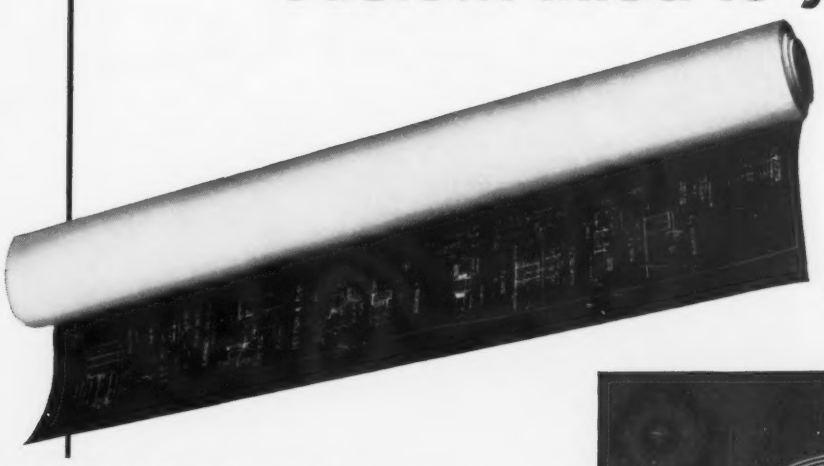

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• **By the scientific use** of the *energy* in colors, COLOR DYNAMICS relieves eyestrain, reduces nervous tension and physical fatigue and increases efficiency. That is why many leading architects specify Pittsburgh's system of COLOR DYNAMICS for use in industrial plants, schools, hospitals, hotels, office buildings.

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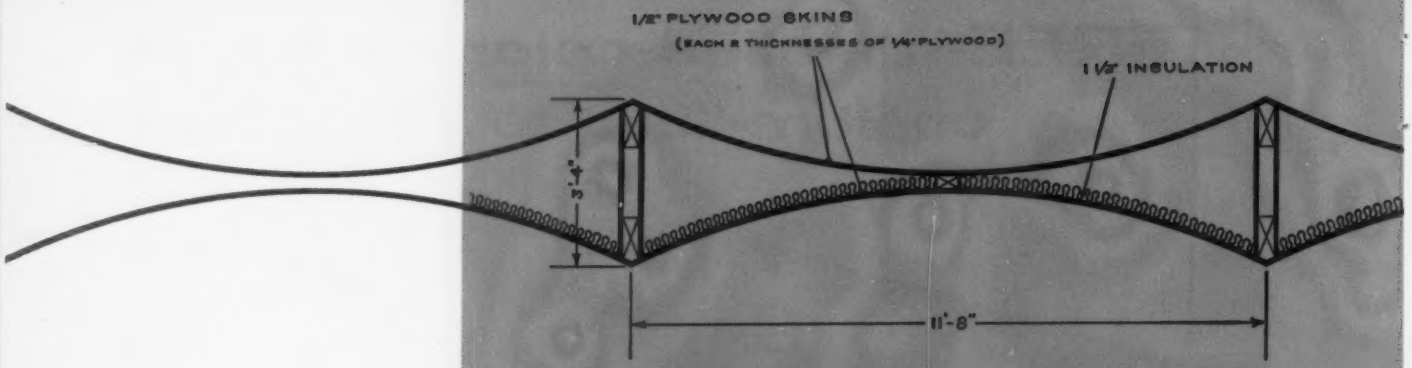
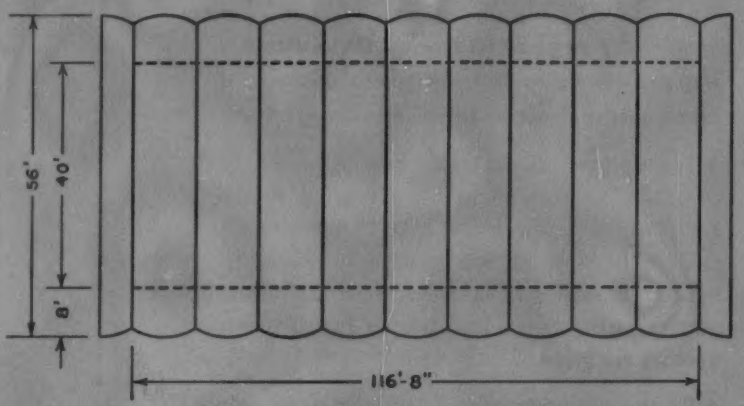
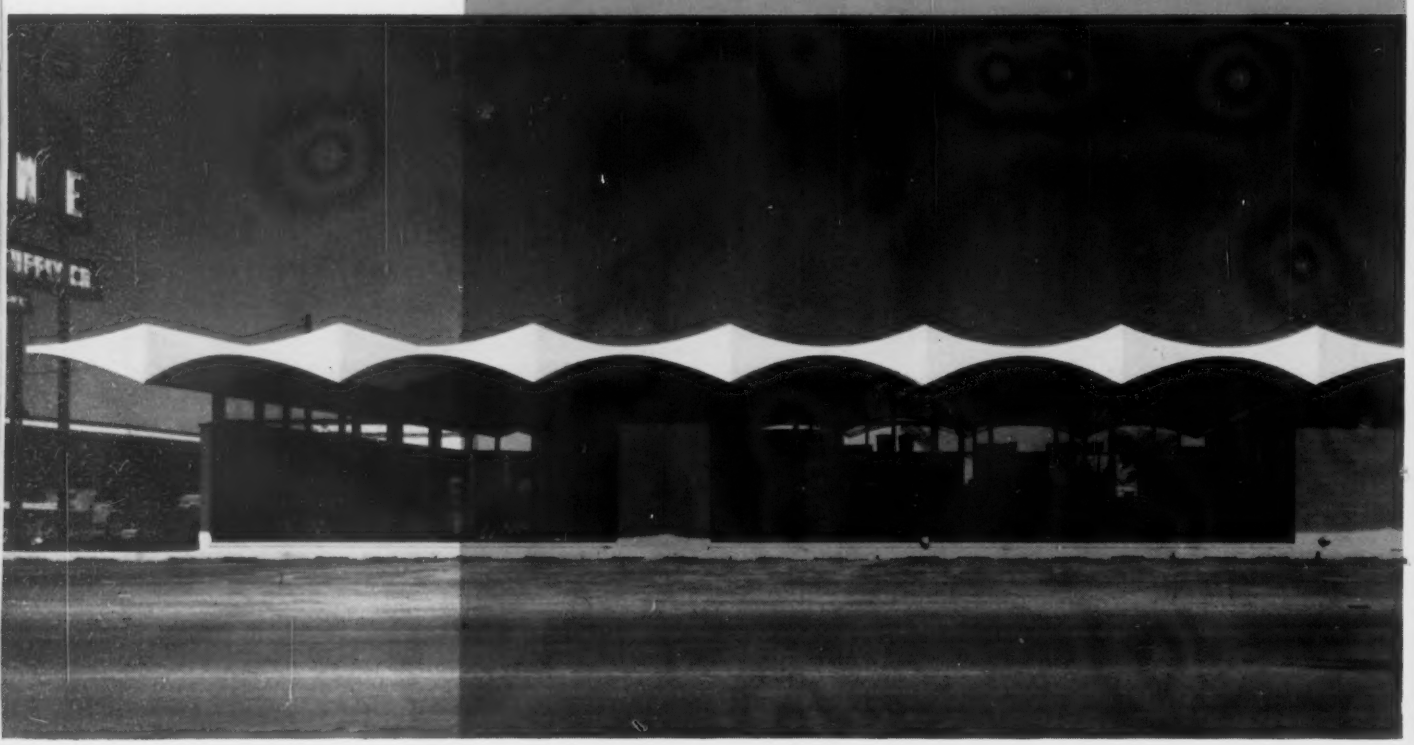
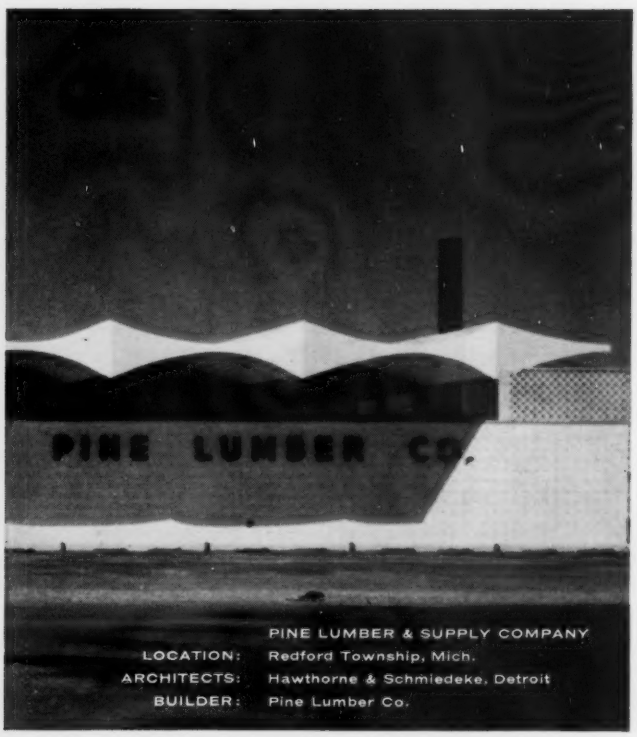

1/2" PLYWOOD SKINS
(EACH 2 THICKNESSES OF 1/4" PLYWOOD)
1 1/2" INSULATION
3'-4"
11'-8"


56'
40'
8'
116'-8"



new approaches to structural design with fir plywood


PINE LUMBER CO.
PINE LUMBER & SUPPLY COMPANY
LOCATION: Redford Township, Mich.
ARCHITECTS: Hawthorne & Schmiedeke, Detroit
BUILDER: Pine Lumber Co.

THE AWARD-WINNING DESIGN of this retail lumber showroom is another example of the striking new architectural forms possible with fir plywood, at no sacrifice—in fact, with a gain—in structural strength and integrity.

The rippling roofline was created by a series of doubly concave plywood barrel vaults. It demonstrates the major advantages of the plywood vault for non-residential as well as home construction: design flexibility, a strong rigid roof, and economy in time and materials, due to plywood's high strength-weight ratio and extreme workability.

These vaults are of modified stressed skin construction, with plywood glue-stapled at edges to plywood box beams and, at mid-arc, to a continuous 2 x 4. The system provides large clear floor areas which, together with extensive use of glass for exterior walls, contribute to the remarkably light, open look.

The delicately scalloped silhouette is given a third dimension by a sheet metal fascia that caps the vault ends and bows out in plan to repeat the curve of the arches. For basic fir plywood design data, write (USA only), Douglas Fir Plywood Assn., Tacoma 2, Wash.

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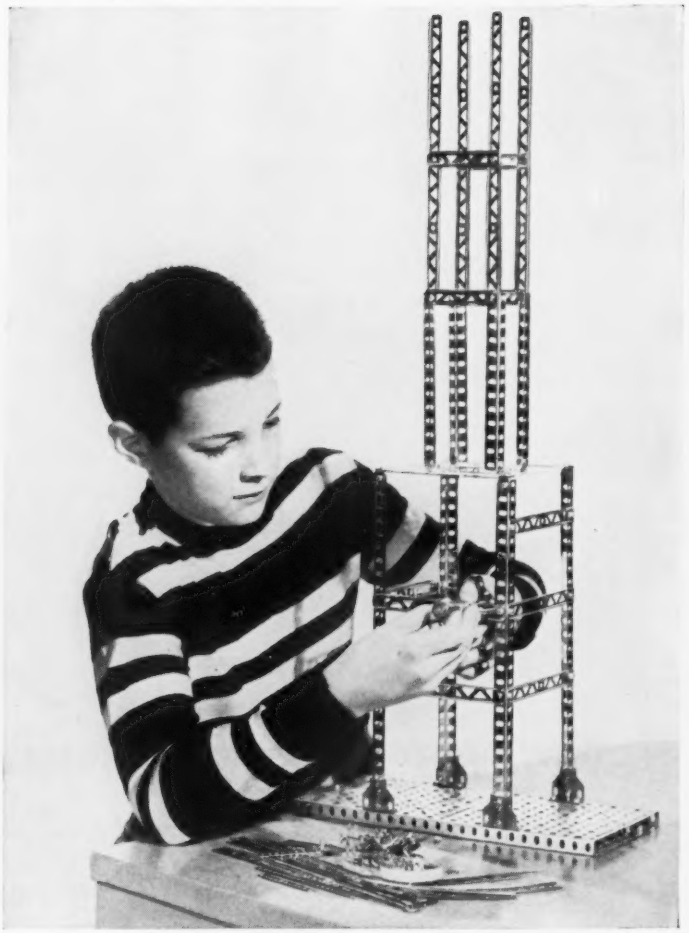
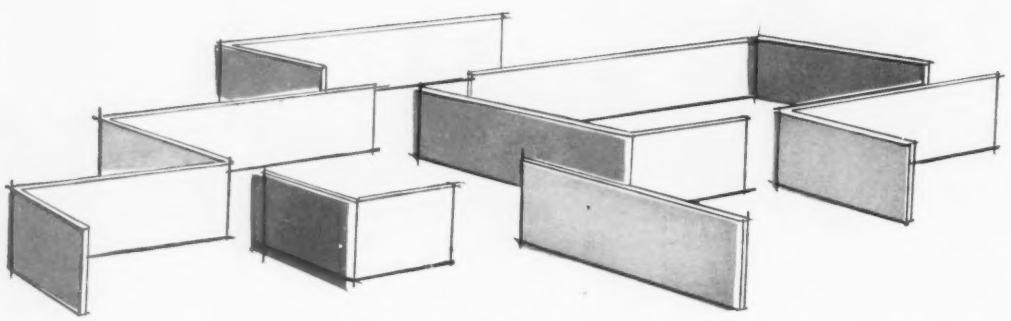
What structural material for schools?



arrives at the site ready to go up fast!



adapts to many fire-resistant constructions!

costs less per pound than a loaf of bread!

lends itself to easy expansion!

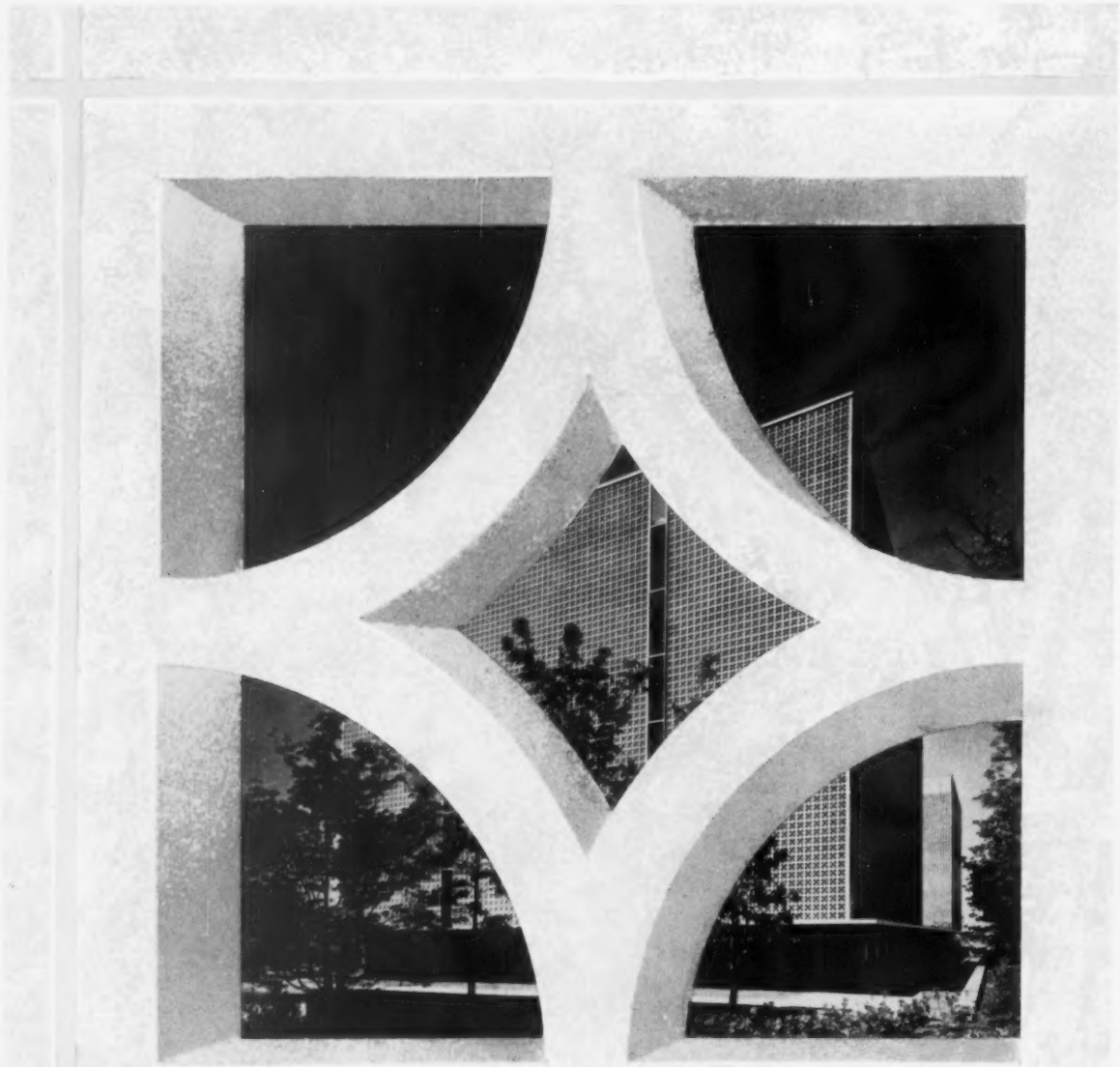
STRUCTURAL STEEL, OF COURSE!

All these advantages hold true not only for schools, but also for plant and office buildings, bridges, churches, houses, shopping centers. Remember, too, that both steel producers and steel fabricators have expanded facilities. That means you can get all the fabricated structural shapes you need—when you need them.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL



Specifications for the Finest Solar Screens

The first choice of leading architects in specifying units for today's modern solar screens, split block or decorative concrete block construction is MEDUSA WHITE, the original WHITE PORTLAND CEMENT with the diamond blue white color. And to set up these beautiful units, architects specify MEDUSA STONESET WHITE MASONRY CEMENT—the only prepared non-staining white masonry cement with a Portland Cement base. Used white or tinted for the ultimate in unit and mortar beauty, they make an exciting precast concrete construction. Specify both of these Medusa White Cements to achieve outstanding concrete masonry construction. Write for detailed information.

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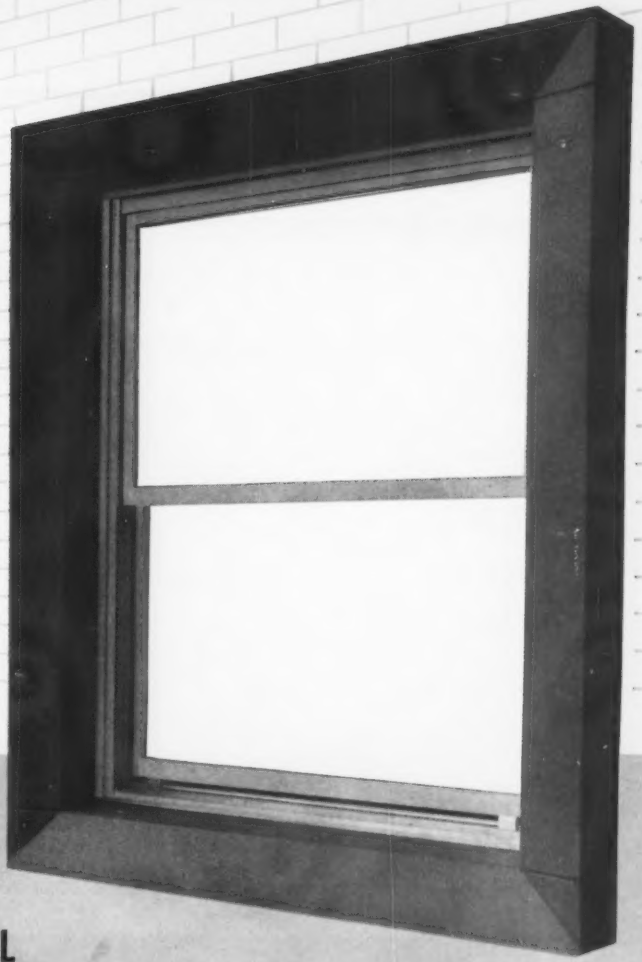

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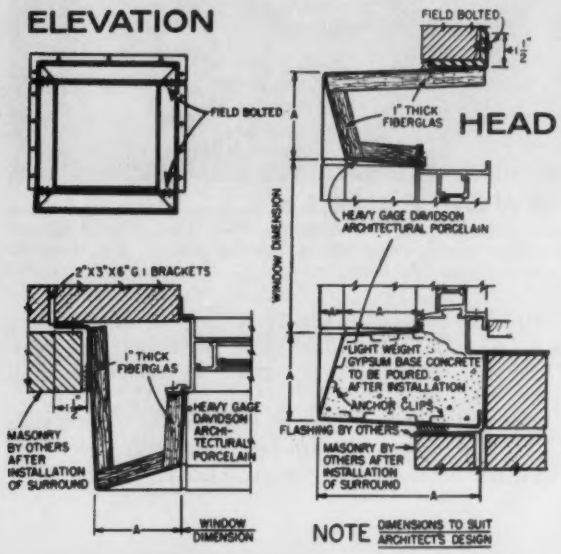

Shelby Memorial Hospital, Shelby, Ohio.
Architects: Conrad & Simpson, Cleveland, Ohio.
General Contractors: Friebel & Hartman, Shelby, Ohio.

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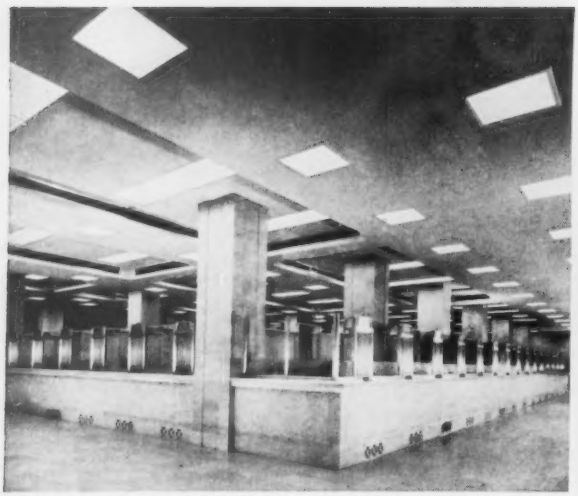
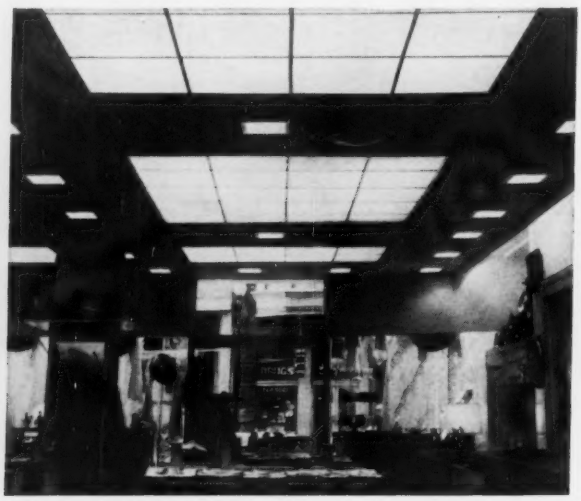


CHICAGO, Ill. Continental Illinois National Bank & Trust Co. of Chicago. Architect: Graham, Anderson, Probst and White. Fixture Manufacturer: Lighting Dynamics, Inc. Electrical Engineer: Samuel R. Lewis & Associates.

TETERBORO, N. J. Bendix Aviation Company. Engineer/Designer: Stanley R. Bessler with cooperation of Fred DeAngelis, Plant Engineer. Fixture Manufacturer: Sylvania Electric Products, Inc.

PHILADELPHIA, Pa. Lewis Tower Building. Architects: Louis & Henry Magaziner, and Jack Press, Jr. Designer/Decorator: Wanda Norstrom. Fixture Manufacturer: Lithonia Lighting Products Co.



NEW ORLEANS, La. Roosevelt Hotel, Sutton's Linen Shop. Designer/Decorator: J. M. Ber, New Orleans, in conjunction with New Orleans Public Service Lighting Division. Fixture Manufacturer: Luminous Ceilings, Inc.

The Fiberglas* Polarizing Light Panel, developed, produced and sold nationally by Owens-Corning Fiberglas after a thorough test marketing period, is now being used successfully by many of the country's leading fluorescent fixture manufacturers. The panel is establishing itself as the modern, attractive way to increase lighting effectiveness.

A few of many successful installations are shown above.

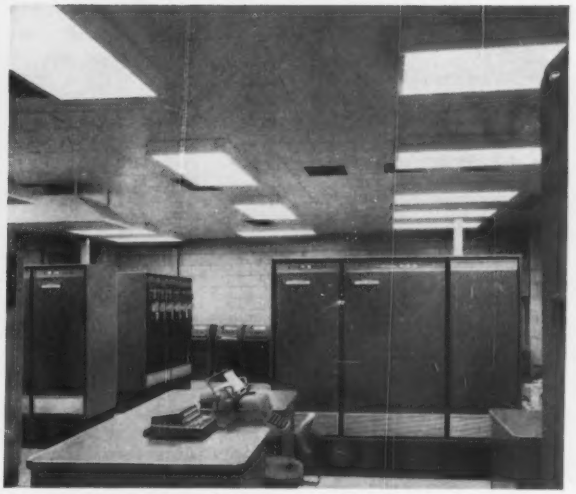
Fiberglas Polarizing Light Panels provide for high levels of illumination, evenly distributed, glare-controlled light. Their textured appearance attractively complements all ceiling treatments.

Fiberglas Polarizing Light Panels combine the two most desirable properties in lighting—the cut-off of direct glare (up to now accomplished by a lens or louver) and the reduc-

LIGHT PANELS

NOW PROVED-IN-USE!

UPPER DARBY, Pa. Liberty Real Estate Bank. Architects and Engineers: George M. Ewing Co. Fixture Manufacturer: Keystone Electric Mfg. Co. Lighting Engineer: Francis A. Tahner.



PITTSBURGH, Pa. Pittsburgh Airport Air Traffic Computer Room: Electronic Engineer, Hugh McEvoy. Fixture Manufacturer: Sylvania Electric Products, Inc.

BOSTON, Mass. Travelers Insurance Co. Building. Architects: Kahn & Jacobs. Fixture Manufacturer: Sylvania Electric Products, Inc. Electrical Engineer: Jaros, Baum & Bolles.

MARIETTA, Ga. Lockheed Aircraft Corp., Georgia Division Plant. Architect: Aeck & Associates. Fixture Manufacturer: Day-Brite Lighting, Inc. Electrical Engineer: Walter H. West & Associates.

tion of reflected glare (previously made possible by a diffuser).

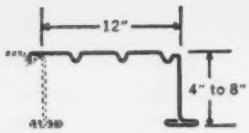
Leading fixture manufacturers will supply Fiberglas Polarizing Light Panels to your specifications. For descriptive literature and guide specifications, write: Owens-Corning Fiberglas Corp., Dept. 63-E, 717 Fifth Avenue, New York 22, N.Y.

OWENS-CORNING

FIBERGLAS

T.M. REG. U.S. PAT. OFF.

*T.M. (Reg. U.S. Pat. Off.) O-C.F. Corp.

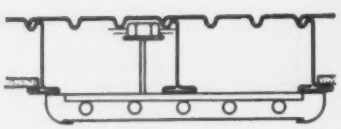


T-STEEL — New! Galvanized. For clear spans to 32'0". Adaptable to acoustical and flush, luminous treatments. Provides superior diaphragm to resist seismic and wind loads.

Ceiling Treatments with T-Steel Deck

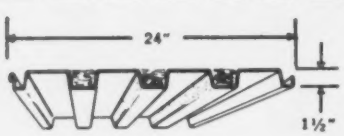
Standard Tile or Board

Light Diffuser

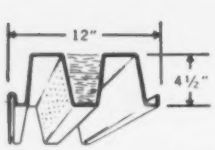


Surface-mounted Fixture

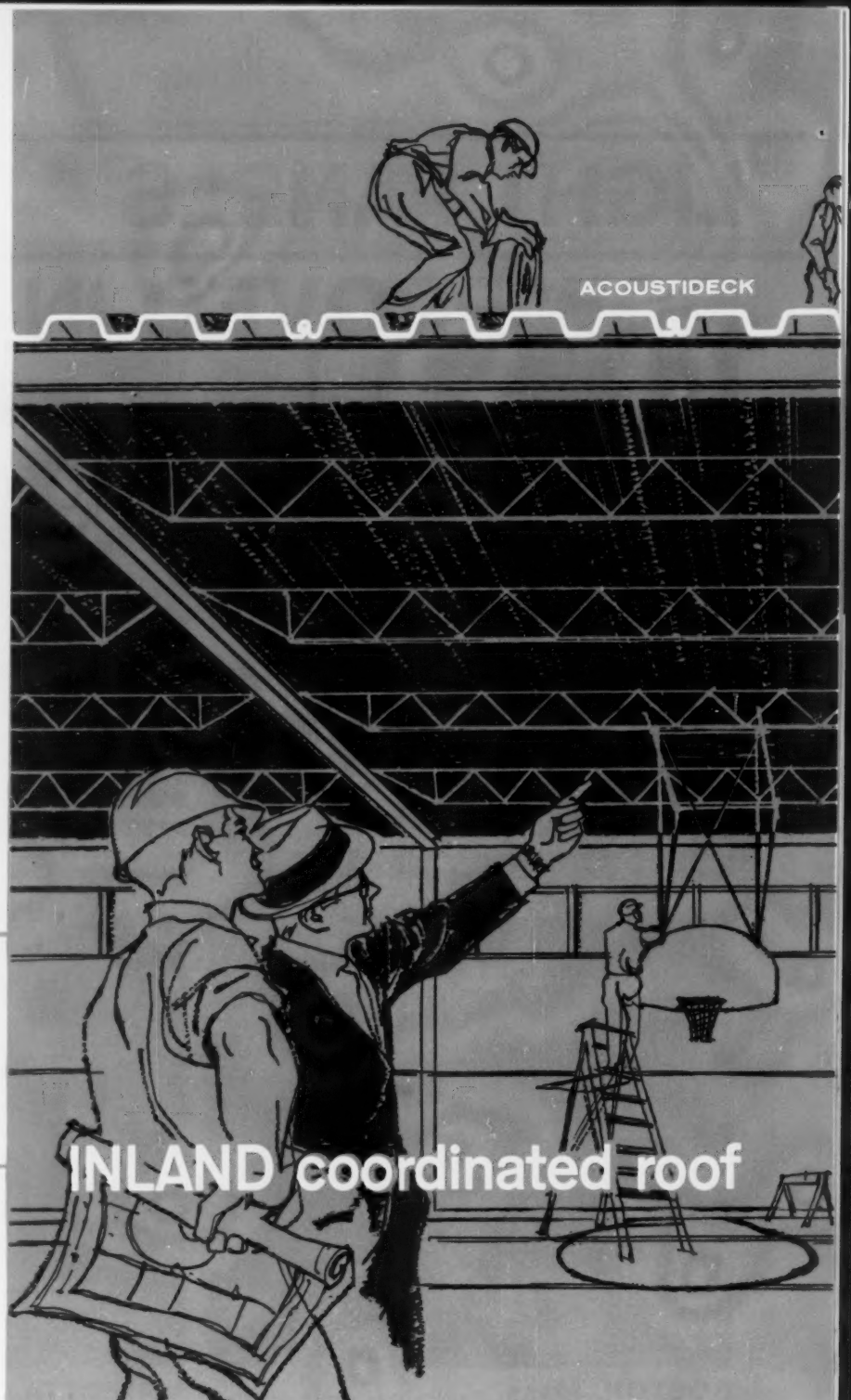
Lath-and-Plaster Fireproofing



TYPE B ACOUSTIDECK — For purlin spacings to 10'. Uses minimum of 1" rigid insulation board.



TYPE C ACOUSTIDECK — For purlin spacings to 24'. Uses minimum of 1½" rigid insulation board.



Complete structural systems permit a range of ceiling, lighting, and acoustical treatments within budget limitations

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Panels are erected fast in any weather that a man can work. Since the panels are Bonderized, then covered with a baked-enamel prime finish, field-painting costs can be cut in half because only one finish coat is required normally. The fluted underside is left exposed as an attractive ceiling.

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New T-Steel Roof Deck allows you design freedom in covering classrooms of 26′ to 32′ spans. You can specify various types of acoustical tile — provide a flush, luminous ceiling — or leave the underside of T-Steel exposed and paint it.

T-Steel deck provides a superior diaphragm to resist seismic and wind thrusts — proved by full-scale shear tests conducted by independent engineering firms.

Write for catalogs 240, 241 and 246 — or see Sweet's sections 2c/Inl and 11a/In for full information on Acoustideck and T-Steel. Inland Steel Products Company has a force of trained sales engineers capable of giving you the benefit of diversified experience on specific problems. Write or call your nearest Inland office.

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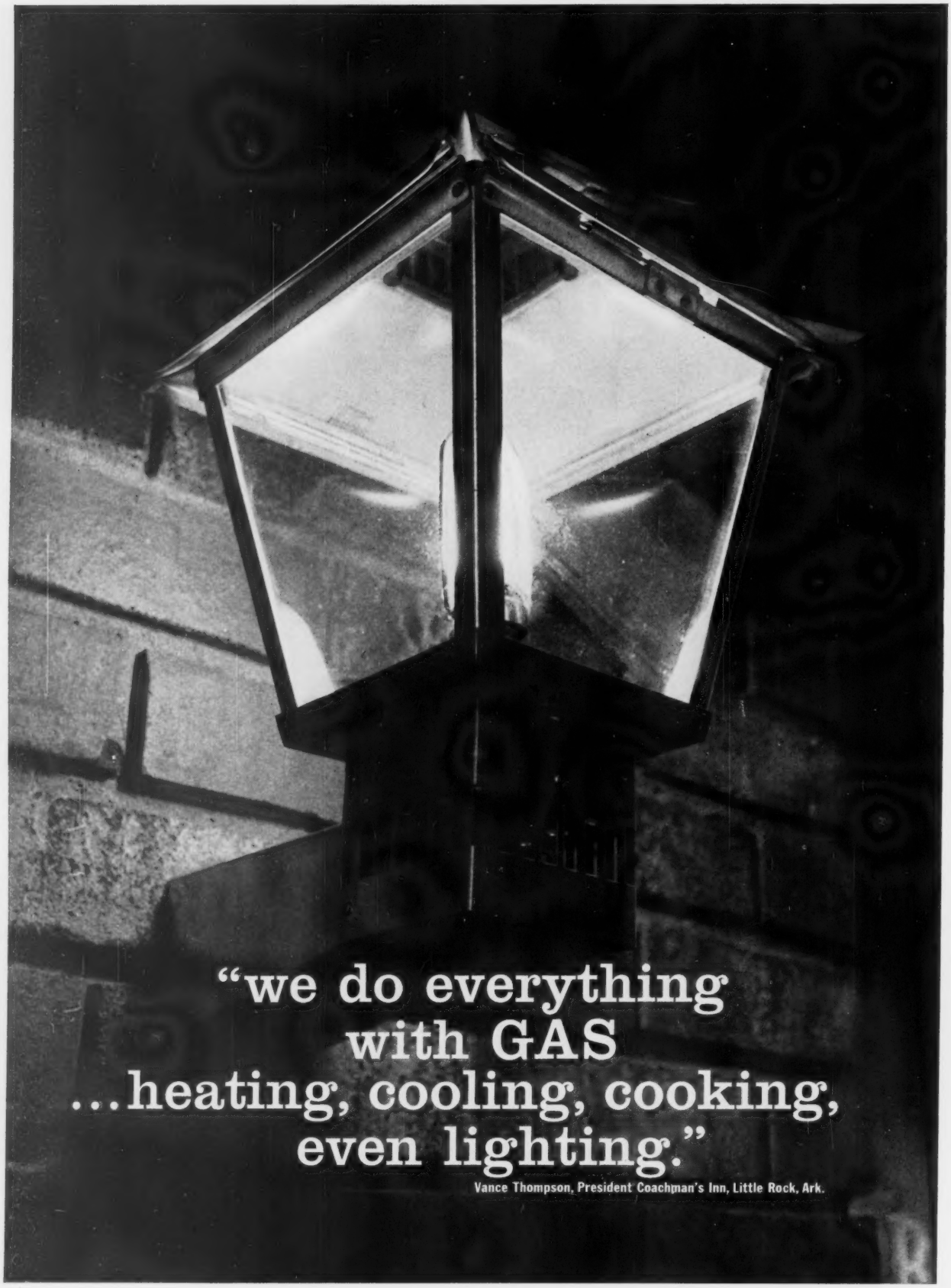
"we do everything
with GAS
...heating, cooling, cooking,
even lighting."
Vance Thompson, President Coachman's Inn, Little Rock, Ark.

The new Coachman's Inn . . . a 258-unit motel in downtown Little Rock . . . is the last word in ultramodern convenience and comfort. In the words of satisfied guests, it has everything.

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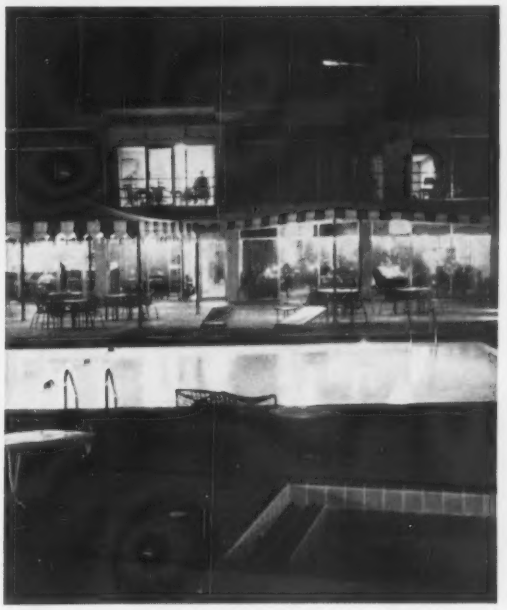
Six 25-ton Arkla-Servel Gas absorption units provide summer air conditioning. The source of energy for the chiller units is low pressure steam from a gas-fired boiler. The same boiler furnishes heat in winter.

Guests and management alike appreciate the automatic convenience of the Arkla-Servel gas absorption cooling system. The chillers shut themselves down, one by one, as the load decreases. And, since cooling requirements seldom exceed 80% of capacity, one unit can be shut down if necessary without affecting cooling efficiency.



At the Coachman's Inn, year 'round air conditioning is only part of the job for gas. Gas cooks the meals. Heats all water, including the pool. Illuminates the decorative Arkla Gaslites. And, in gas flambeaux, adds a dramatic touch to the beautiful Sunken Patio.

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These architects know the Roddis name represents a standard of quality and craftsmanship unmatched in the industry. A standard maintained through more than 60 years of manufacturing and design leadership.

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Roddis now offers the most complete wood door line wholly designed and produced by a single manufacturer. May we send you our latest brochure?

Roddis doors

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Now it can be told

This engraved marble tablet recently uncovered in one of the long-lost Phrygian caves shows how Midas fooled the public. This stuff wasn't 14-karat at all. The "Midas Touch" is nothing but a myth. Midas used ColorRold* Stainless Steel, developed by Washington Steel Corporation. Gotta give the old charlatan a lot of credit though—he knew a good thing when he saw it.

MIDAS SPECS: 2 cubits × .025″ ± .001″ × coil, Type CCCII (302), Rb 82 max. Sunbrite gold, 50 glossimeter, 1 mil, paper interleaved, skidded for open oxcart only. 12 × 10^8 drachma max. wt. per coil.

*ColorRold, an organic coated stainless steel, comes in eleven harmonizing colors, can be formed and drawn or textured and highlighted in an infinite number of designs and effects, now available for your architectural or product needs.

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PRODUCERS OF *MicroRold®* STAINLESS STEEL

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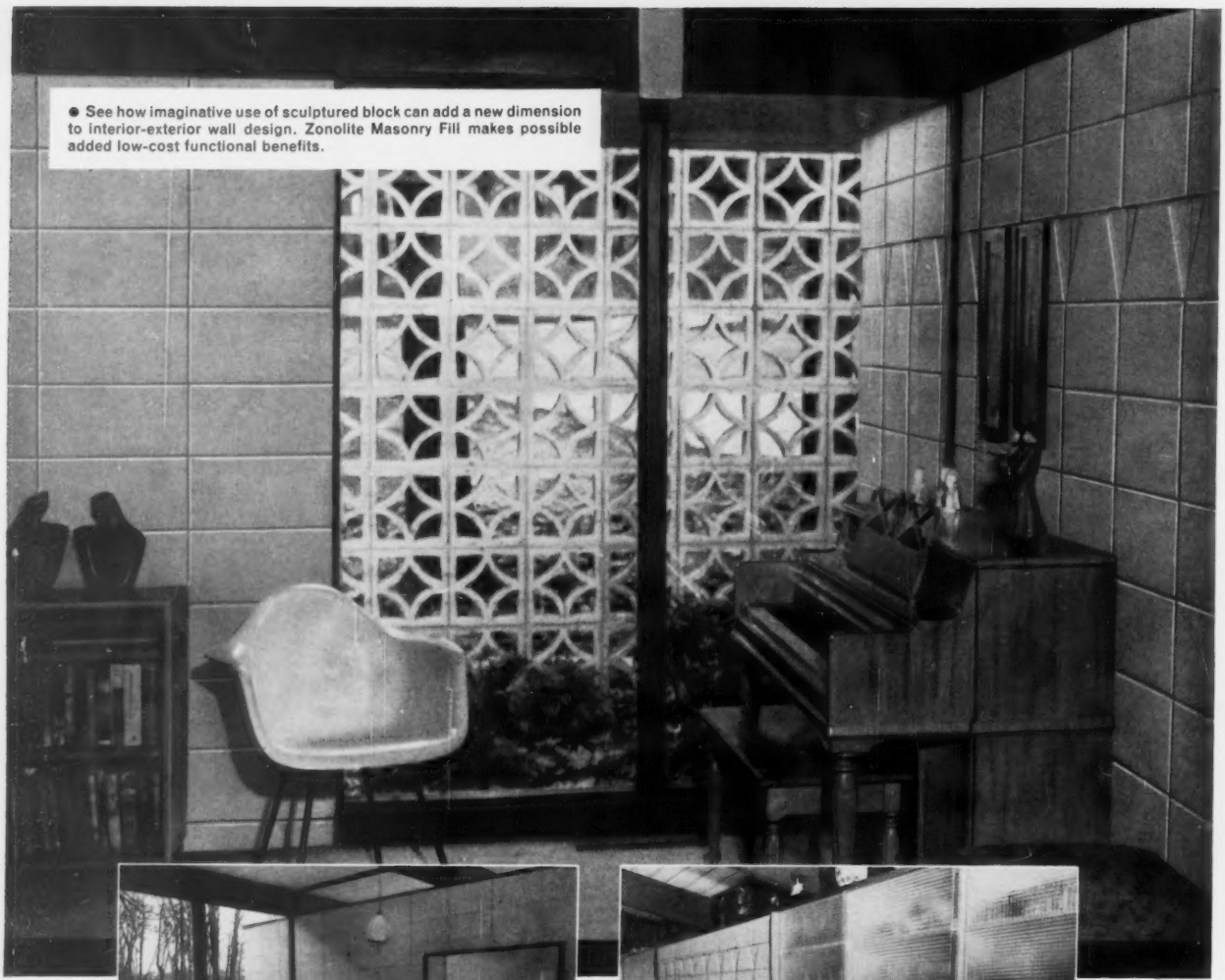

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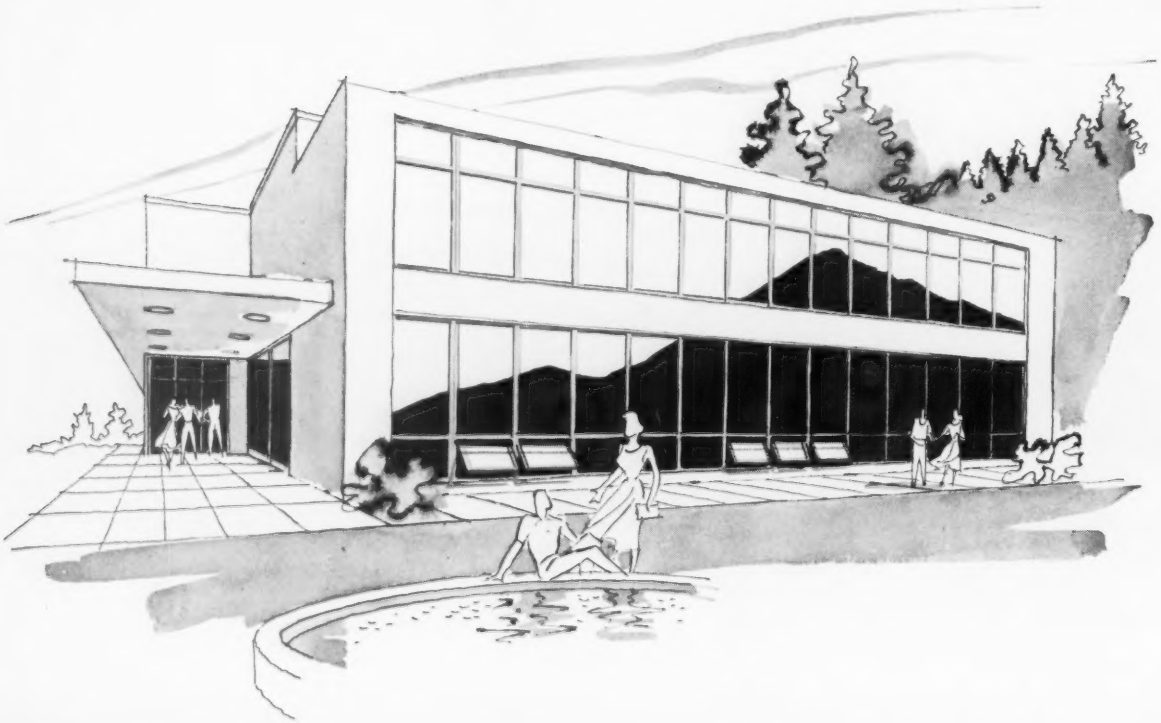

Gotham Lighting Corporation announces a new group of recessed fresnelens downlites with wide-angle distribution[1] to meet the needs of architects, designers and engineers. These units combine optically engineered Alzak reflectors with exclusive Gotham fresnelenses[2] to produce high efficiency[3] and comfortable brightness. Twist-lock fastened[4] hinged doors are featured in all units, adding to the clean appearance by eliminating visible hardware. Two series of downlites comprise the groups: Series 5000[5] which have lenses set flush with the ceiling, and Series 5100[5] with lenses regressed above the ceiling plane.

Cross-section of typical 5100 Series unit

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2
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3
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4
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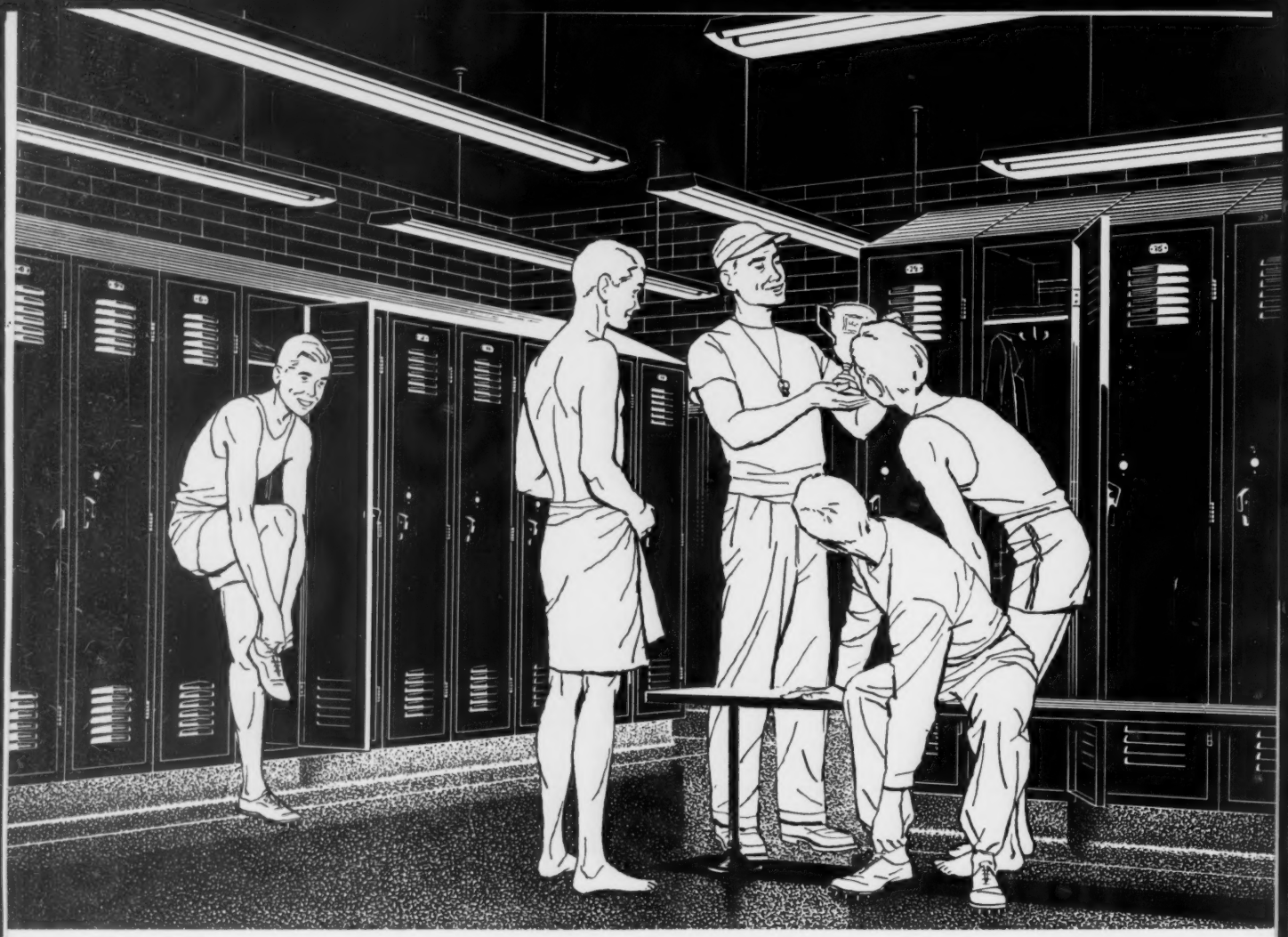

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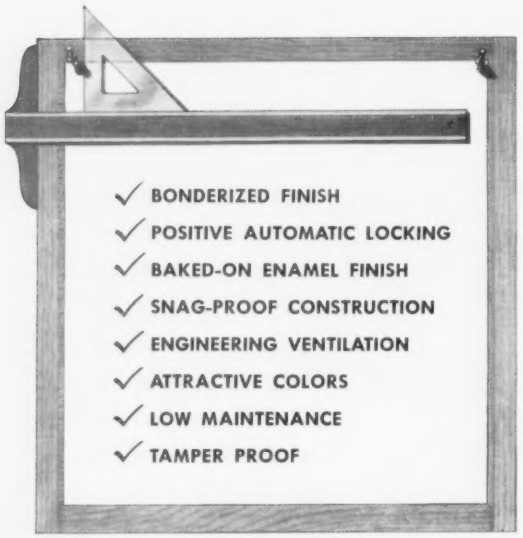

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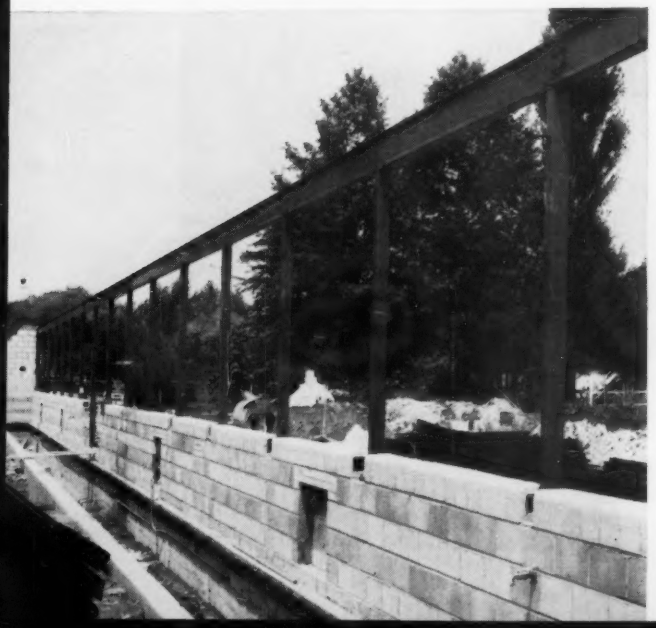

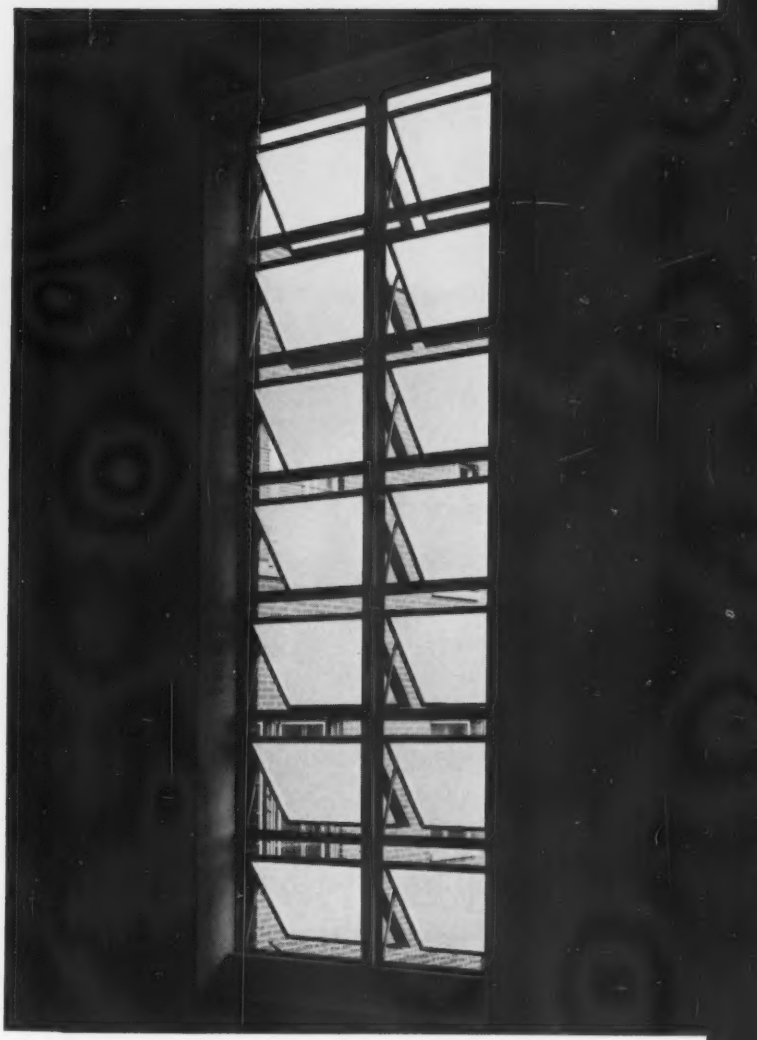

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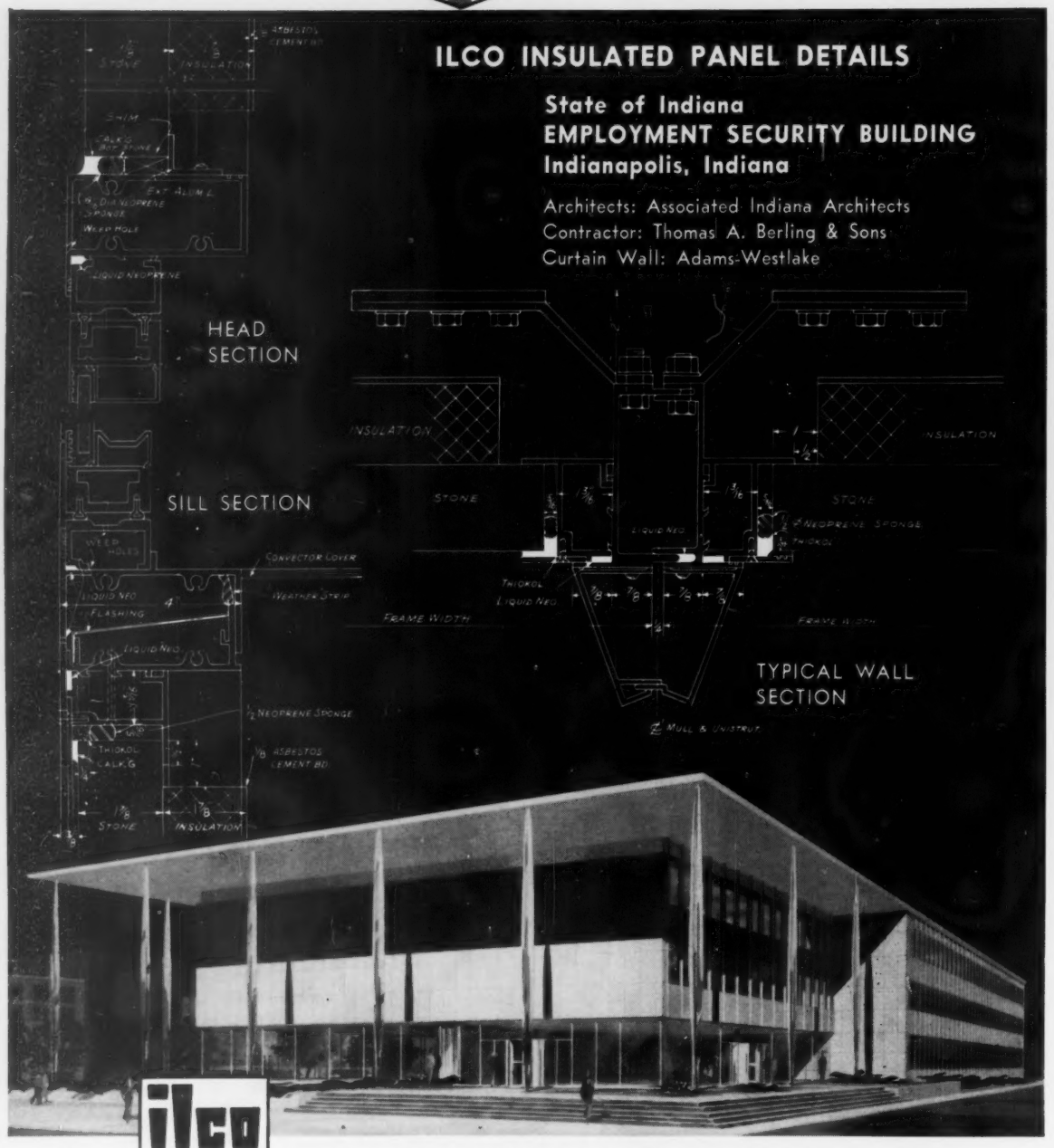

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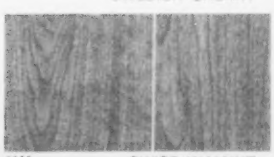
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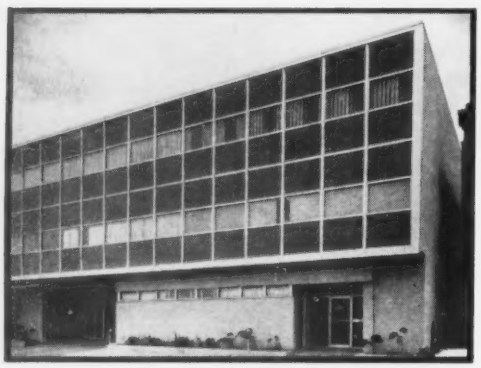
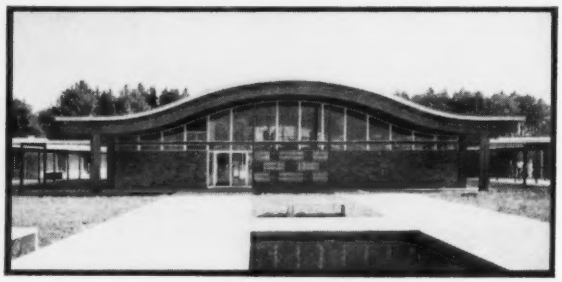
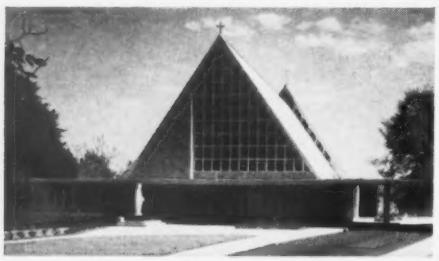
Baptist Hospital Medical Center Building in Memphis, Tenn., has Vampco fixed ventilators. Architect: Walk C. Jones



Excellent example of light construction with Vampco aluminum products is the Professional Enterprise, Inc. building in New Orleans, La. Architects: Favrot-Reed-Mathis-Bareman



Gordon Cornwell, imaginative architect, designed this high school located in Traverse City, Michigan; used Vampco window walls, doors and windows.



Church of The Immaculate Heart of Mary in Maplewood, New Jersey, incorporates Vampco aluminum windows and window walls. Architect: Arthur P. Rigolo

Entrance to Science Hall, Ferris Institute in Big Rapids, Michigan, has Vampco aluminum walls and doors. Architects: Roger Allen and Associates.

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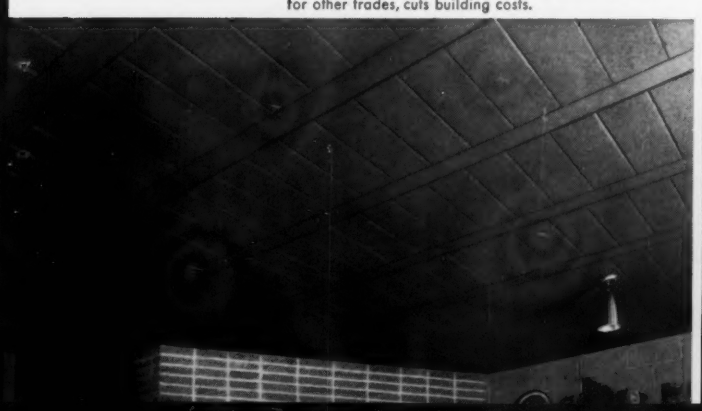

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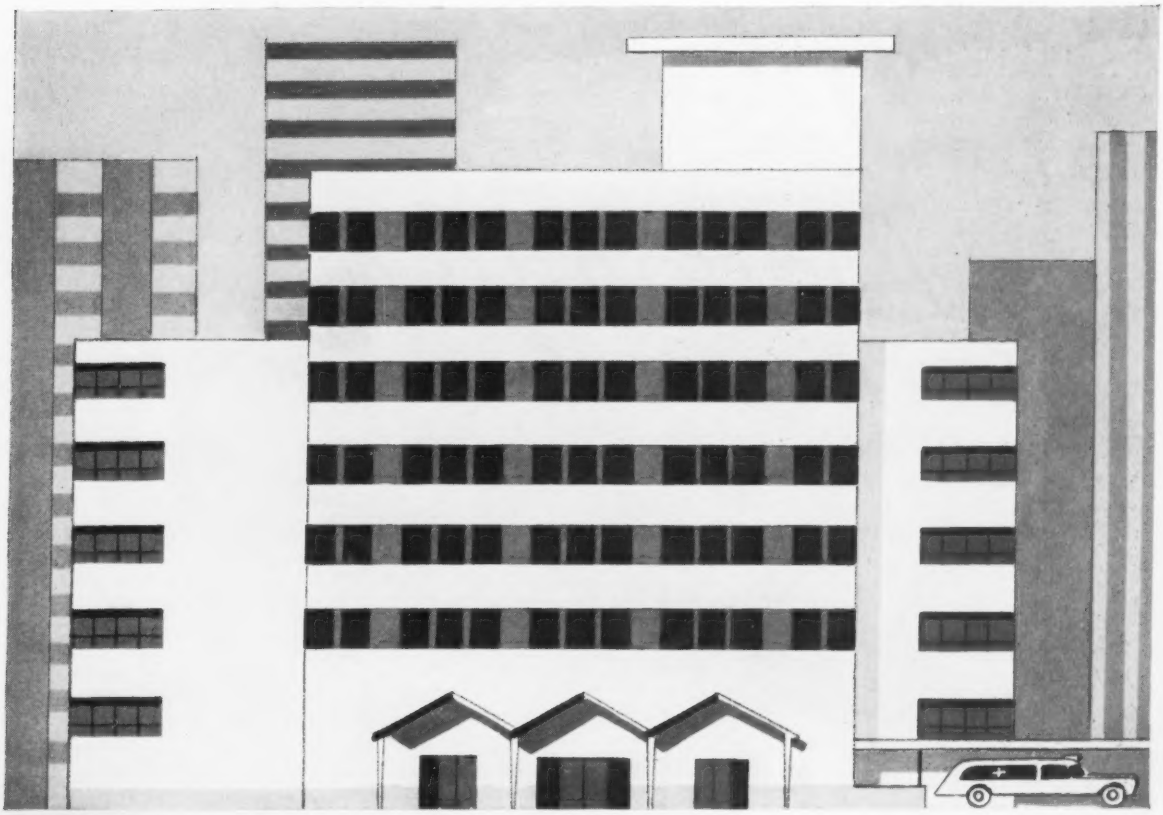

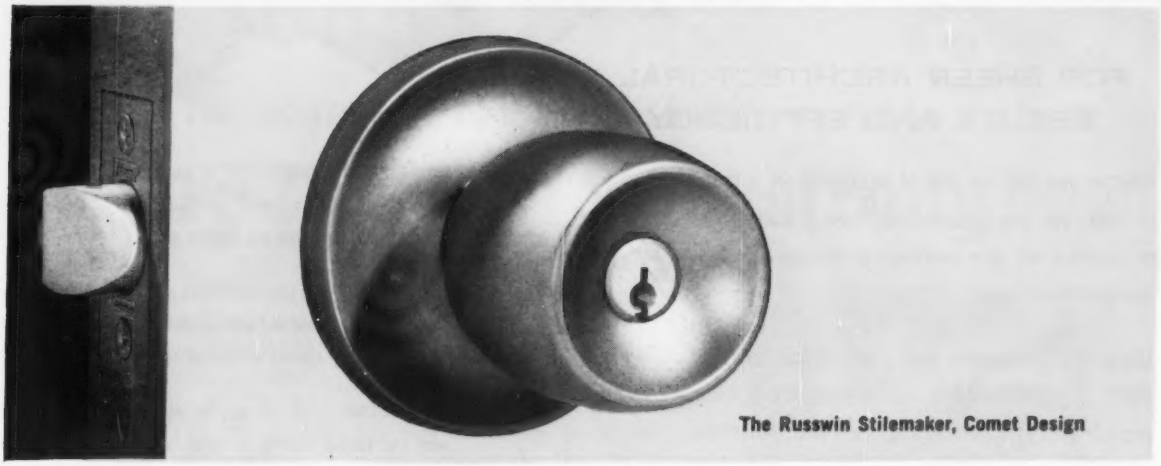

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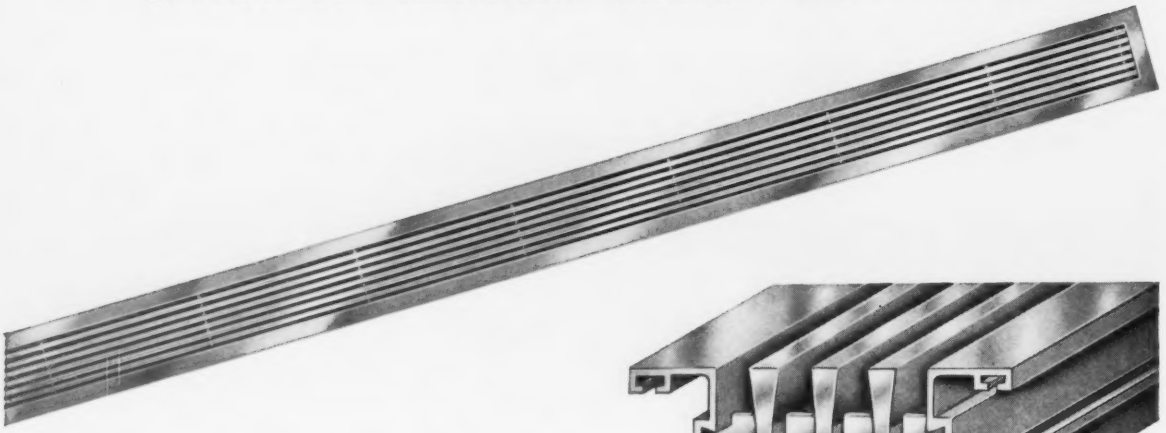

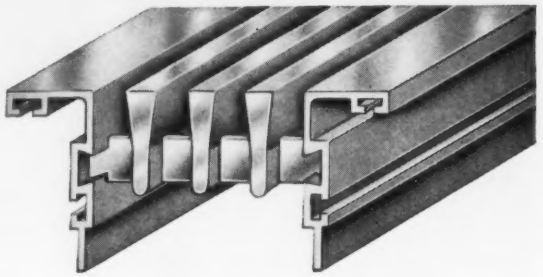

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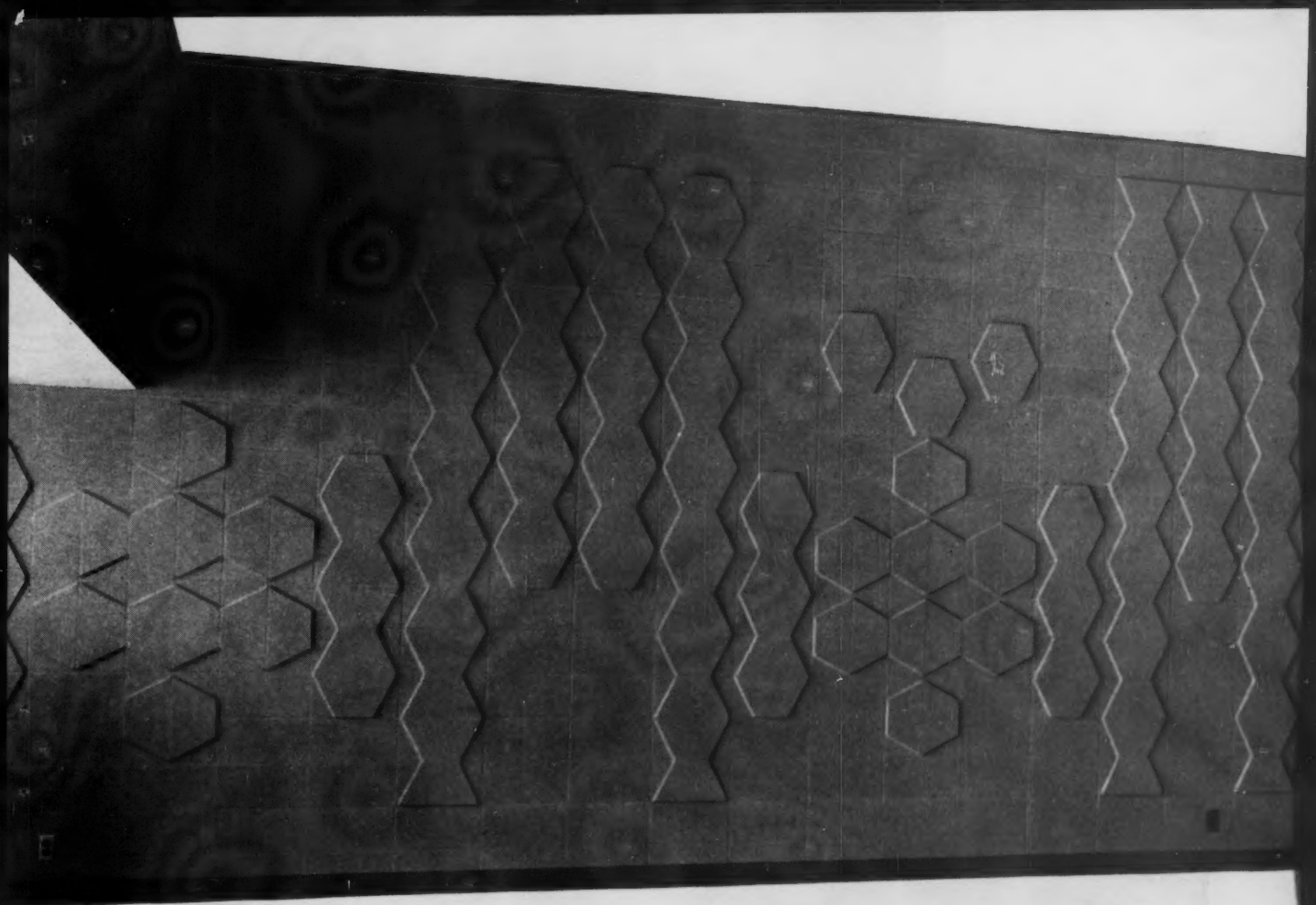

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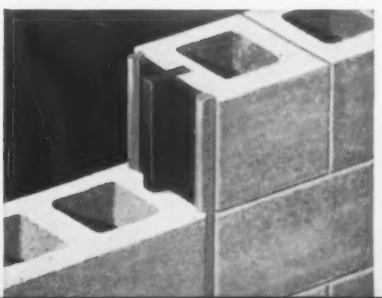

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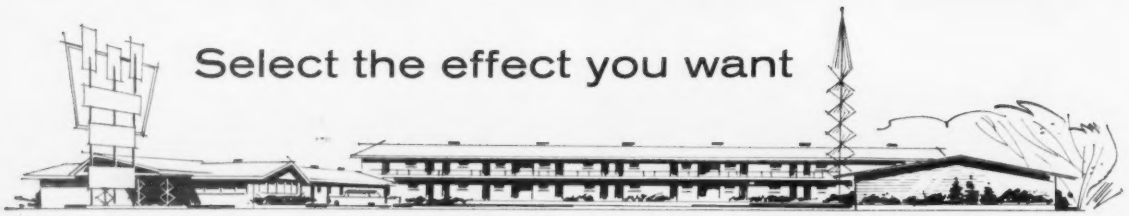

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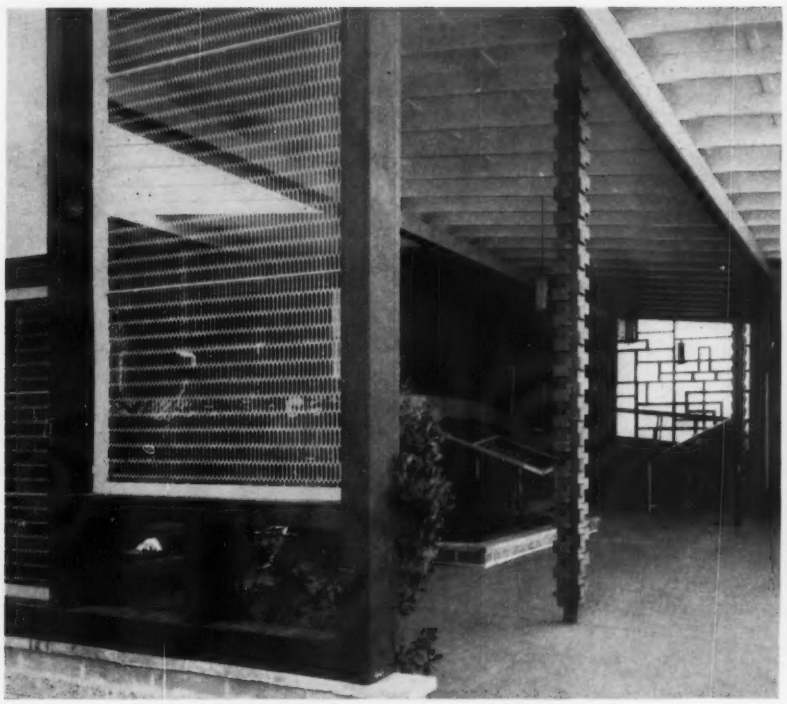
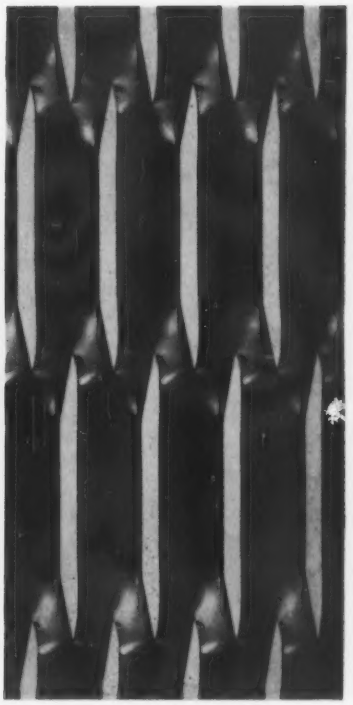


Area divider of Louvremesh at the entrance to San Bruno Medical Center in San Bruno, California.



Louvremesh is one of the new Penmetal patterns.

How one architect capitalized on the versatility of Penmetal architectural expanded metal

For the San Bruno Medical Center, California, architect Leonard Michaels A.I.A. of San Mateo used Penmetal Louvremesh in two different ways. At the entrance it serves a decorative purpose as an area divider. Elsewhere, on the exterior of the building, it is used as smart vertical panels with a practical purpose, too: control of sunlight during the working day.

New applications such as this show Penmetal expanded metal as the versatile building material it is. And, because it is available in a number of new patterns, it is ideal for virtually any architectural style. Comes in plain or anodized aluminum and carbon steel.

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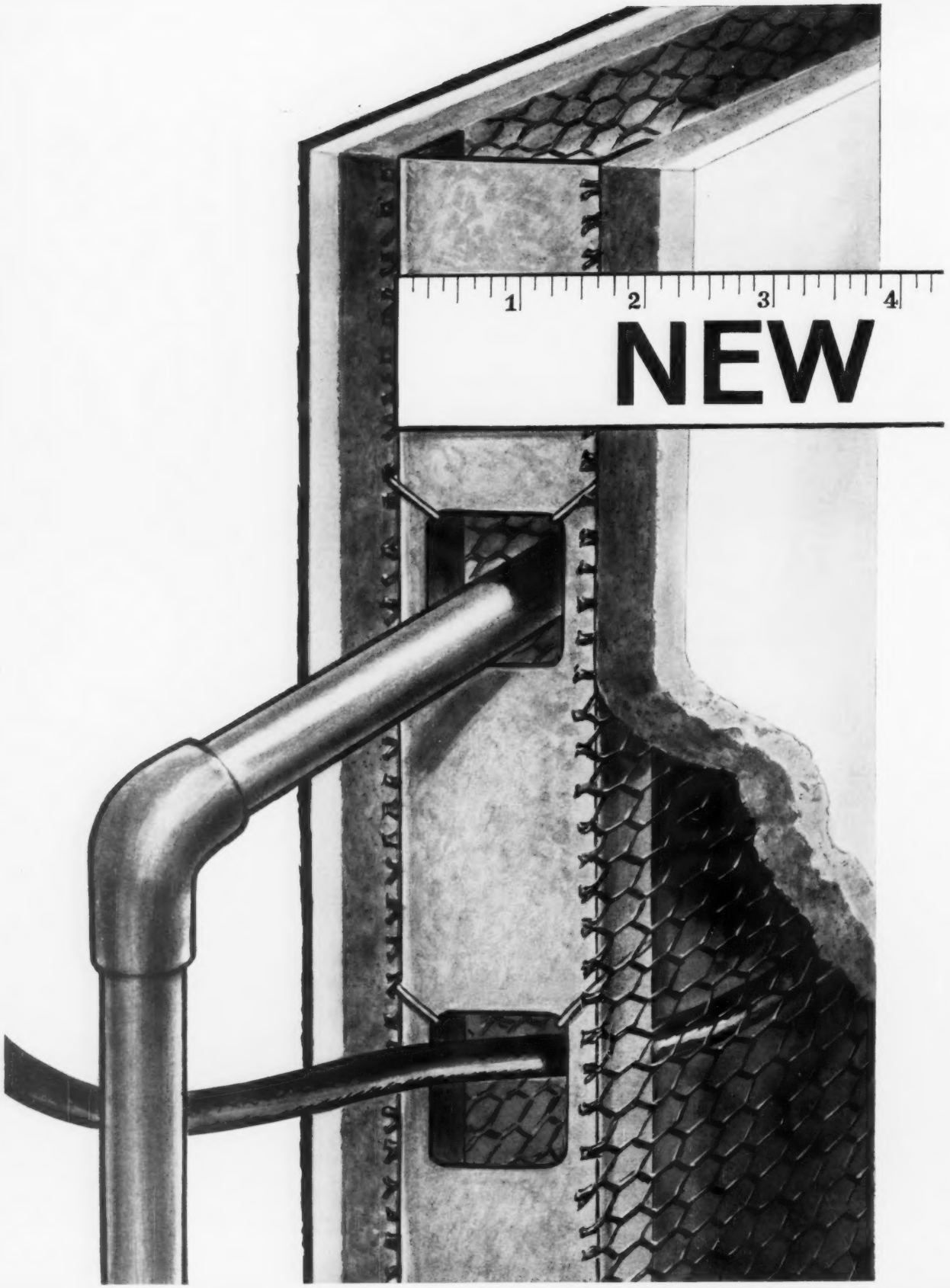
PM-245

On the building's exterior, Louvremesh was applied vertically, with the slope of the diamond arranged to deflect direct rays of the sun.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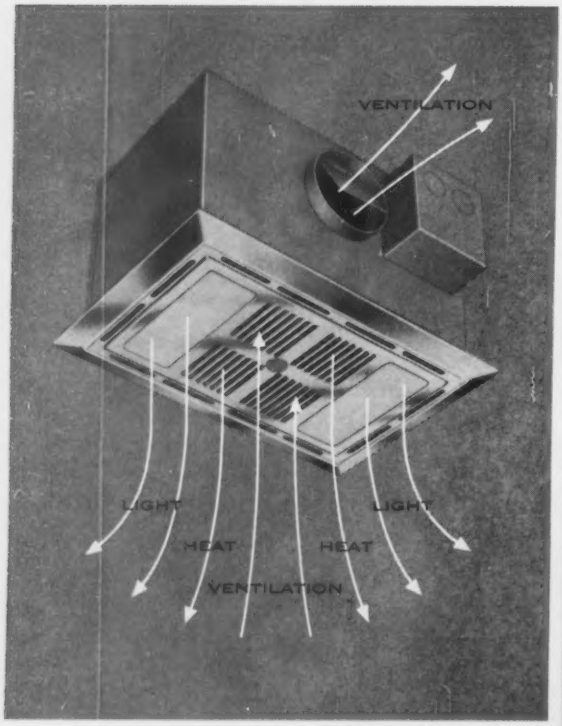

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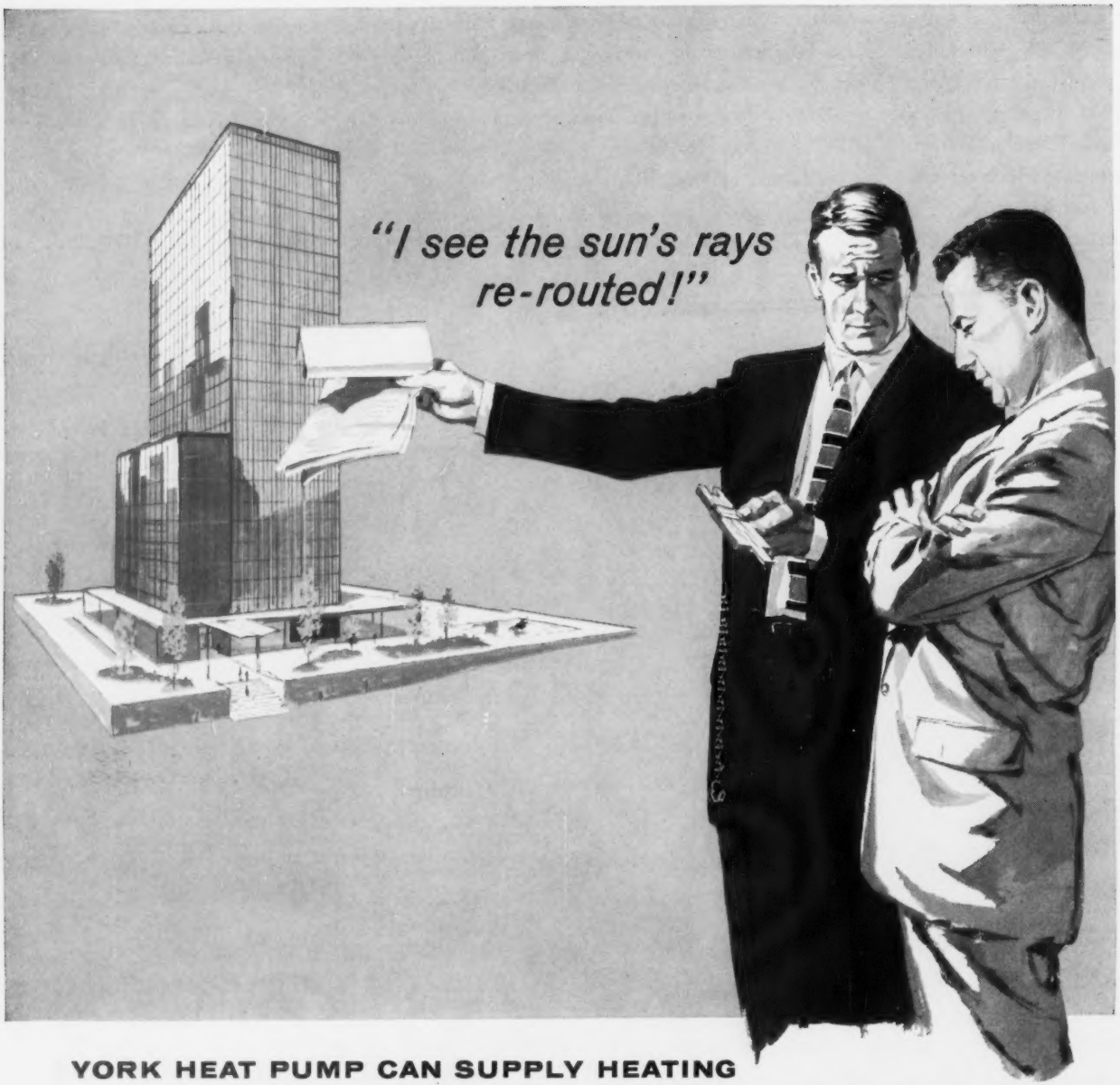
ARCADIA / BRISE SOLEIL



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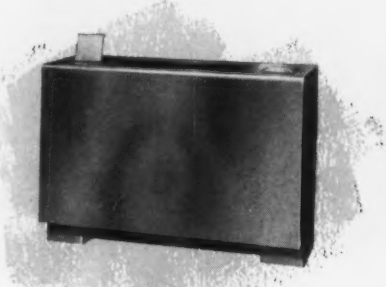

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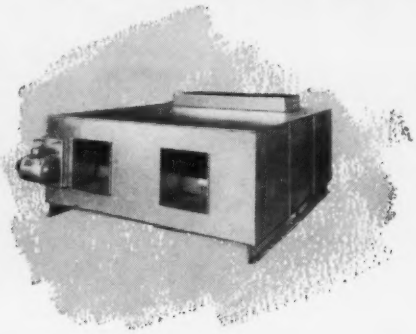

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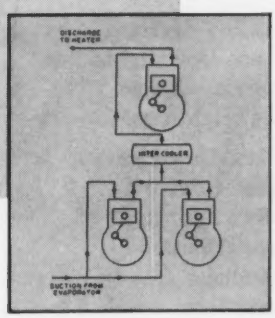
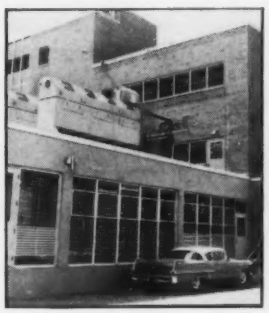
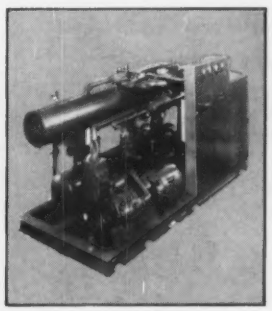


Exclusive compound compression wrings heat from -10°F. air, no supplemental strip heating needed. Makes York Heat Pumps practical anywhere in the U.S. Single-stage systems available for areas where winter temperatures remain above 0°F.



No chimneys, boilers, fuel—Uses only air and power. Produces up to 67% more heat from same power than single-stage system. Clean, smoke-free—No chimney maintenance, no boiler water treatment. Photo shows air units on roof.



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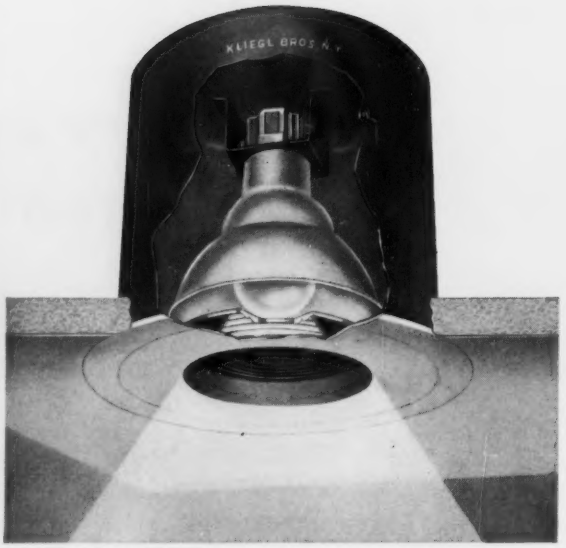

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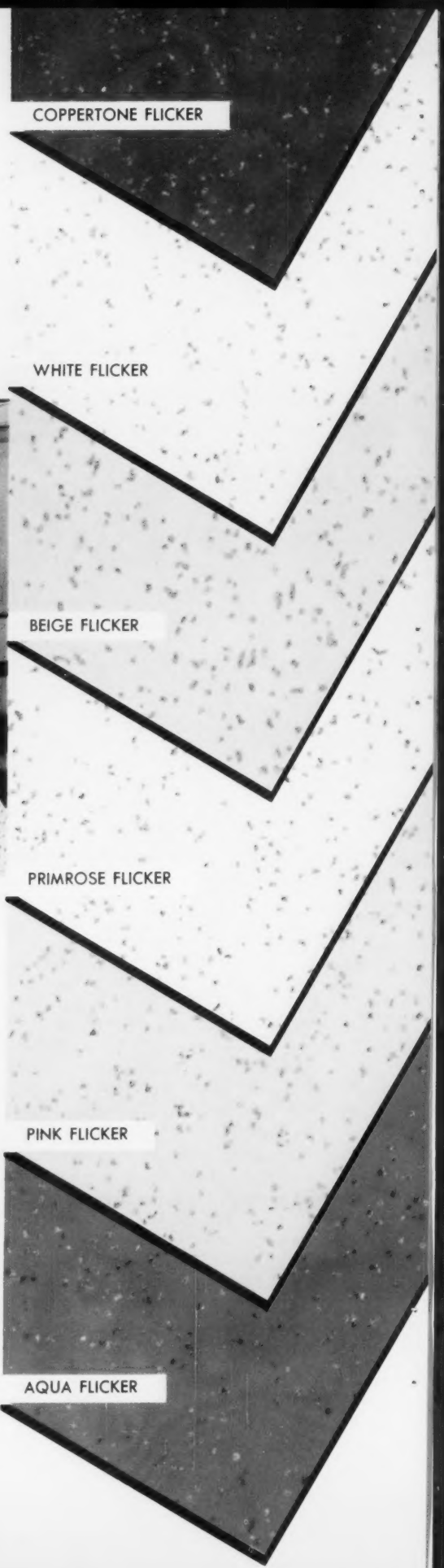

Sparkling new Consoweld Laminated Plastic surfacing available in 6 luxurious decorator colors!

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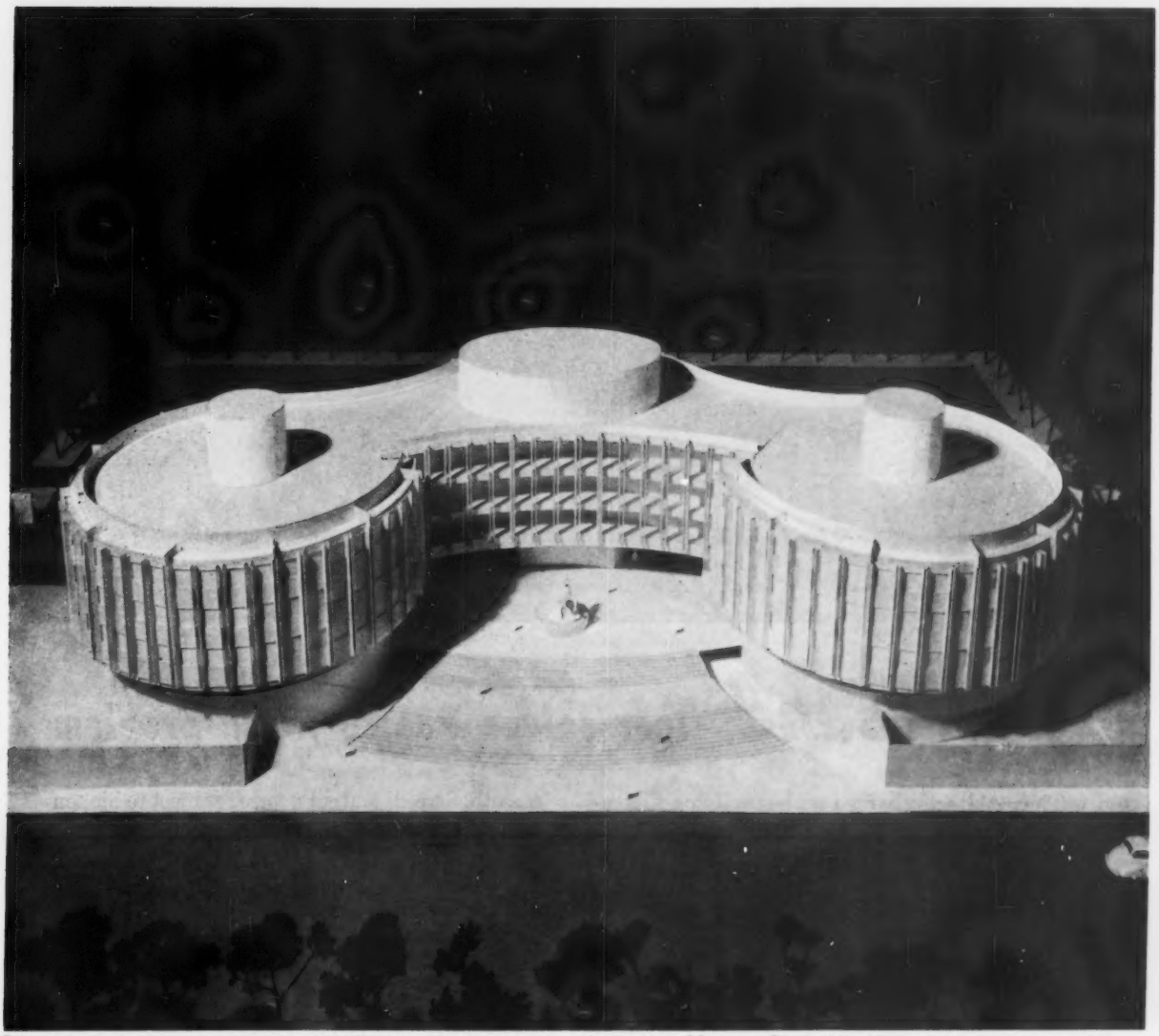
PROGRESSIVE ARCHITECTURE MAY 1960

NEWS REPORT

Architecture's Monthly News Digest of Buildings and Projects, Personalities, New Products



Philadelphia Police Administration Building by Geddes, Brecher & Qualls adds new dimensions to use of precast concrete.

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77	CONVENTION DIARY, SAN FRANCISCO	**115**	MANUFACTURERS' DATA

9,700 sq. ft. $^{33}/_{32}$" Edge Grain IRONBOUND floor in U. S. Naval Station, San Juan, Puerto Rico, including gymnasium, stage, dressing rooms and corridor. Arch: Font & Montilla, San Juan. GC: Harada Corporation, San Juan.

Ironbound* floor solves Puerto Rican problem

The architects charged with specifying this replacement wood floor were faced with a real problem: Puerto Rico's high humidity and termite conditions had destroyed previous floors within five years.

They specified the floor system best equipped to combat these conditions — Ironbound* Continuous Strip* Edge Grain Hard Maple.

The use of Edge Grain Maple in an Ironbound floor prohibits excessive movement. Individual flooring strips are interlocked with steel splines to prevent shifting and to keep the surface smooth. Screeds and subflooring subject to hidden deterioration are not used.

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If you are confronted with similar problems, specify the Ironbound guaranteed floor system.

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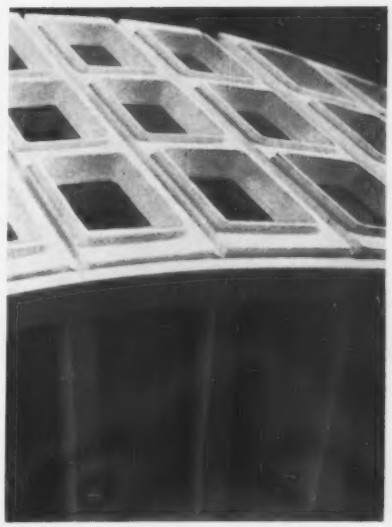
Philadelphia Project Will Star Precast Concrete

Striking Building Will House Police Headquarters

PHILADELPHIA, PA. Architects Geddes, Brecher & Qualls have designed a structural system for the proposed Police Administration Building here that is stunning in its simplicity. (A complete presentation is scheduled for OCTOBER P/A.)

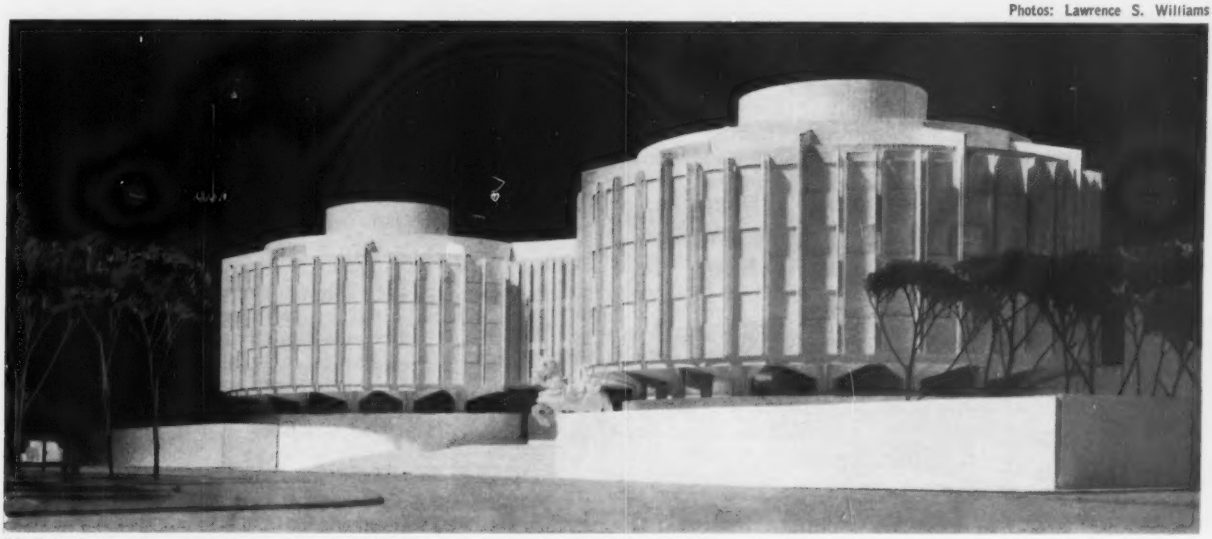
The important structure will be primarily precast concrete. From the air, the building will be shaped like Cleopatra's breastplates, two circular units connected by a curved corridor element (termed the "backbone" of the building). According to the architects, the three upper, office floors have been planned for continuous, flexible office space, with 78% of the typical office floor directly usable for office work. Facilities for receiving and processing of prisoners will be in the basement. All areas of public interest, such as magistrate's court, radio headquarters, and lunch room, will be at the lobby level; the public is not expected to visit other areas (except, conceivably, as guests of the city on the basement level). The building will face Franklin Square, and the forecourt has been planned as an "extension" of the Square.

The structure will consist basically of two precast-concrete elements. According to GBQ, ceiling-floor systems will be "precast, wedge-shaped, channel-section panels containing integral spaces for lighting and mechanical services." Walls will be three-story-high precast panels "combining the functions of load-bearing, enclosure, and housing of mechanical services." The panels, which will be 5 ft wide, 35 ft high, and 2½ in. thick, will be produced from special plaster forms. Panel jambs will return in to total depth of 18 in. by 6 in. thick to provide structural support.



Detail shows strong play of light and shadow over concrete wall panels.

Photos: Lawrence S. Williams



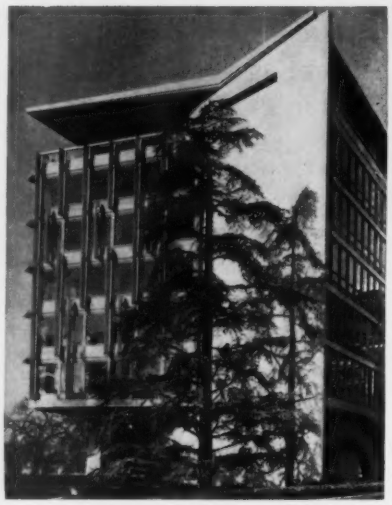
Model photo gives monumental feel of building, relation to Lincoln Square.

SWISS WINS REYNOLDS AWARD

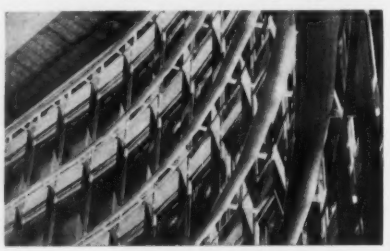
Uses of Aluminum Termed "Witty," "Sensitive"

The annual R. S. Reynolds Memorial Award for creative use of aluminum has been given to Architect Jean Tschumi of Switzerland for his Nestlé Administration Building on the shores of Lake Geneva in Vevey, Switzerland. This is the fifth time in the award's five-year history that it has gone to a foreign design. The Jury, headed by Dr. Walter Gropius and composed of Philip Will, Jr., Arthur Fehr, James M. Hunter, and C. E. Pratt, commented that "the lack of imaginative use and sensitive detail in some United States entries may reflect the ready availability of standard and pre-engineered building components . . . and the restraints imposed by U. S. building codes and insurance requirements."

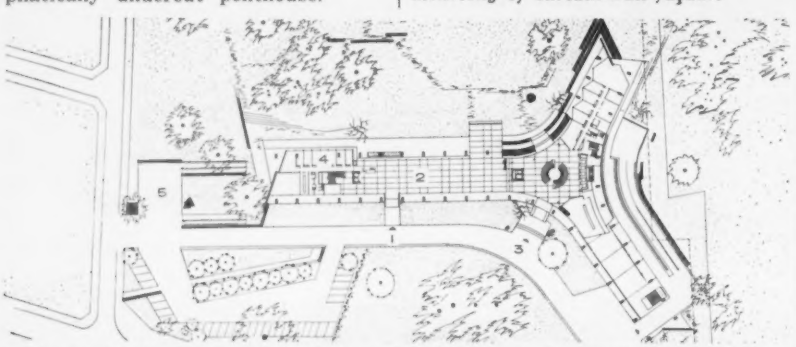
The seven-story building was praised by the Jury for the sensitive handling of aluminum baffles and sun shades and for the ingeniously-designed aluminum entrance canopies. A round, aluminum-sheathed double staircase for employe use was also cited. Additional emphasis to the curved building silhouette is provided by the transparent first floor (giving views to the lake and mountains) and the emphatically undercut penthouse.



End wall fins of Nestlé Building were termed "witty and convincing" by Jury.

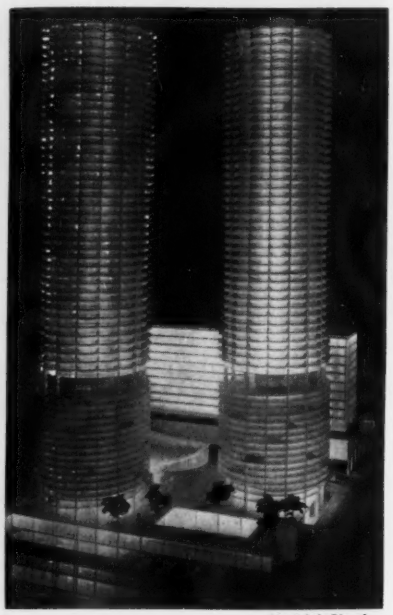


Delicate sun shades serve to break up monotony of curtain-wall façade.



1 *Directors' entrance,* 2 *main hall,* 3 *employes' entrance,* 4 *reception,* 5 *garage.*

Chicago Project to Spark Return to In-Town Living



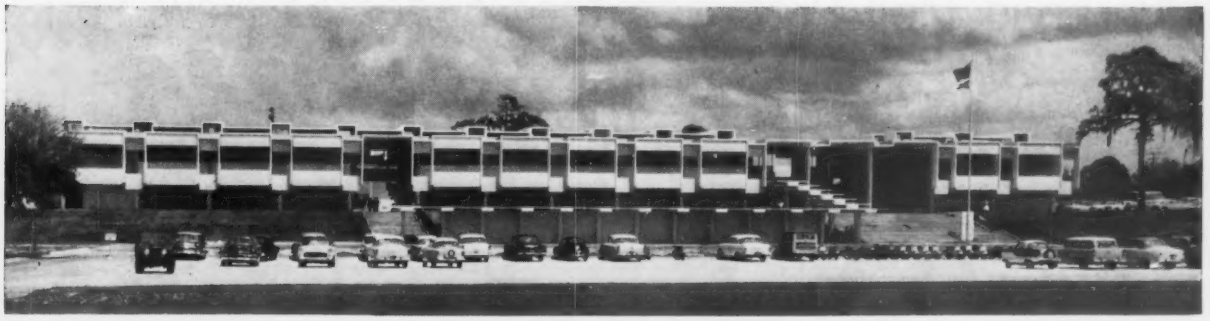
Hedrich-Blessing

CHICAGO, ILL. The Marina City project will be first housing development in the downtown area of this city. The $36 millions, multiuse project, designed by Bertrand Goldberg Associates, will include two circular apartment towers, a motion picture theater, commercial building, skating rink, restaurant, boat marina, and a yacht club on Chicago River.

Main feature of the proposal is a pair of circular middle-income apartment towers which will command views of downtown Chicago and the river. First 18 floors of towers will contain helical ramps providing parking space. Top 40 stories will house efficiency and one- and two-bedroom apartment units, each having separate balcony. Thirty-five-ft central core will contain utilities, mechanical equipment, and elevators which will open into circular hallway. Apartment units will "fan off" hallway, spreading toward balconies. Goldberg compares scheme to a growing tree or flower with "everything moving from the center out to the balconies and beyond."

The ten-story commercial building will be supported by precast concrete window mullions, making the window frames integral structural members. It will rest on preformed concrete pillars, providing a promenade under the structure.

The theater will be the first specifically designed for showing of wide screen pictures. It will feature a screen suspended to "float" 10 ft in front of a 90-ft-high curtain.

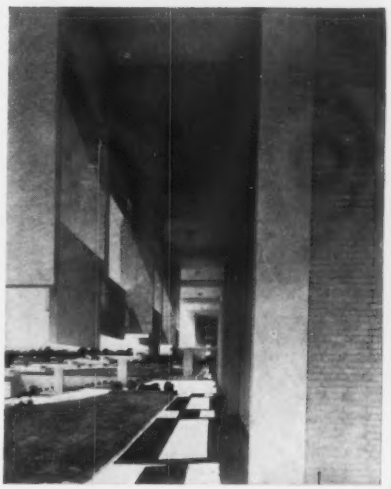


Rudolph's Sun-Shaded School Ends First Semester

Visual Excitement of New School Pleases Students

SARASOTA, FLA. Paul Rudolph's major addition to Sarasota High School has opened here and, like most fine architecture, has created camps of praise and smaller cliques of disapproval. A reporter called it "a factory-like structure with fantastic excrescences," to which Philip H. Hiss, Chairman of Sarasota's Board of Public Instruction, replied that the writer was architecturally ignorant and had a "17th Century mind." Students—the *real* clients—are reported to be enjoying the building tremendously.

Sarasota High School is the latest in one of the country's most significant public-school building programs, begun when Hiss was elected seven years ago. When he took office, Sarasota was building—when it did—schools which became obsolescent before they were finished. He instituted a program of using the amazingly untapped resource of fine architects in the Sarasota-Tampa area (Rudolph, Mark Hampton, the Zimmermans). Lack of experience in school design was not regarded as disqualifying—on the contrary. Hiss remarks that "... it is well to remmember that even such talented school specialists as Caudill, Rowlett & Scott and Perkins & Will at one time designed their first school, and it is a forunate thing someone gave them the opportunity." Innovation, not for its own sake, but to provide better-functioning, more beautiful educational environment, has been the hallmark of his program. "One of the greatest stumbling blocks in the way of better school construction is the unwillingness of school boards, school adminisrators, architects, and engineers to stick their necks out, personally or professionally." Before a line is drawn in Sarasota, architects educate educators and teachers have a chance to explain their needs to architects. Hiss says it all boils down to two ingredients: "hard work and inetgrity of purpose."



Precast concrete sunshades permit filtered sunlight to enter school.

Entrance court has stairs to second floor, bridge to music practice rooms.

Photos: Philip H. Hiss

East view of gym from classroom wing; low link of locker rooms between.

West elevation shows gym on left, classroom wing on right.

Overhead Mall Proposed for Congested New York

Will Macy's Co-operate With Gimbel's?

NEW YORK, N. Y. One of the most congested merchandising areas in the world is the section of New York covering 34th Street from Fifth to Seventh Avenues and containing Herald and Greeley Squares. Major stores here include Macy's, Gimbel's, Saks 34th, Altman's and Ohrbach's. In addition, the area lies cheek-by-jowl with Manhattan's teeming garment center, resulting in impossible traffic conditions for both pedestrian and automobile.

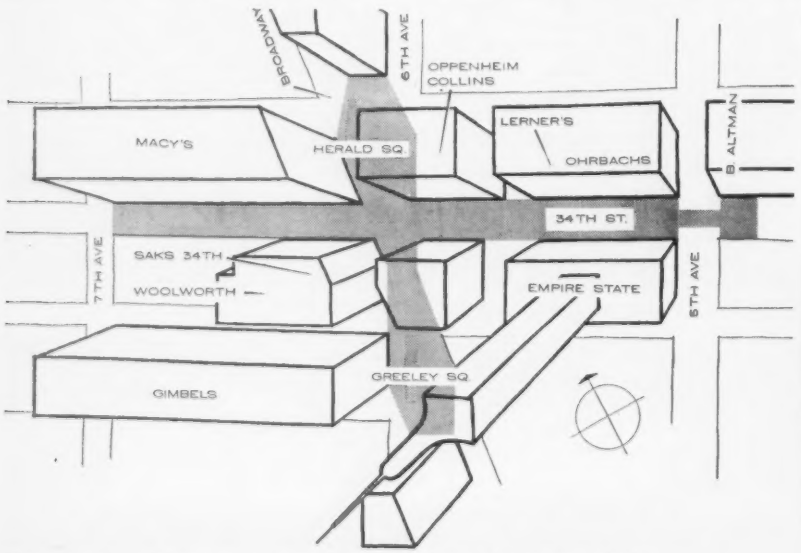
Appalling congestion of shopping area indicates need for prompt action.

To alleviate this condition, New York Architect Meyer Katzman has proposed an elevated pedestrian mall to cover the entire area at the second story level. This, according to Katzman, would "create a public plaza in New York's busiest section of more than ten acres—three times the area of Venice's Piazza San Marco."

The proposal would utilize the elevated mall strictly for pedestrian traffic, freeing the street level for truck deliveries and local crosstown traffic. A proposed crosstown highway on 31st Street would accommodate through traffic. Feeders from this highway would bring suburbanites into the plaza area, according to Katzman.

An interesting sidelight to the proposal is one made in the 1890's by Engineer Egbert I. Viele, who suggested elevated pedestrian walkways over lower Broadway.

Proposal separates pedestrian, traffic. Access is by escalator.



Shopping plaza, shown gray, would be spotted with fountains, planting.

1890's proposal also sought to elevate pedestrian over new rapid transit.

Mies van der Rohe

J. Robert Oppenheimer

C. Northcote Parkinson

CONVENTION DIARY, SAN FRANCISCO, 1960

SAN FRANCISCO, CALIF. Regulars of *Julius's Castle,* the *Ritz Old Poodle Dog,* and *the hungry i* here had their equanimity somewhat disturbed last month by an influx of architects from all over the country, convened to celebrate the 1960 Convention of The American Institute of Architects.

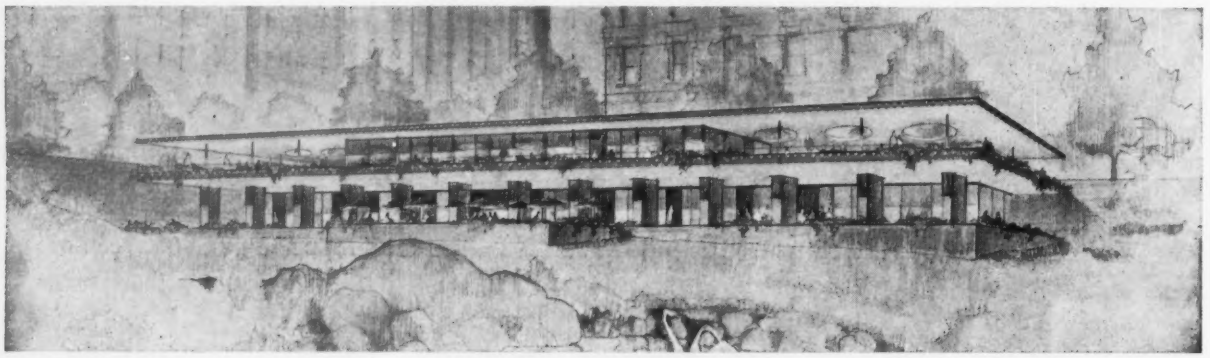
A glittering array of notables was on hand to address the convention and to expound the theme issue of the convocation—"Expanding Horizons." Social kick off for the convention was the Producers' Council luncheon on Monday, April 18, which was addressed by George E. Danforth, Director of Department of Architecture, Illinois Institute of Technology. The banquet of National Council of Architectural Registration Boards took place that evening at the St. Francis.

Morning meetings, Tuesday through Friday, were devoted to speeches and panel discussions on "Expanding Horizons" at Nob Hill's gleaming white marble Masonic Temple. On Tuesday, Dr. Wendell Bell, professor of sociology and anthropology at the University of California at Los Angeles was the major speaker with a panel composed of Architects Harry Weese, Chicago; Henry D. Whitney, New York; and Dean William Wilson Wurster, Berkeley. The panel, which discussed the sociological horizons before us, was introduced by Ralph Winfred Tyler, Director of Center for Advanced Study in Behavioral Sciences, Stanford University. That evening the President's Reception at City Hall was presided over by outgoing AIA Head John Noble Richards, who also presented the forty-one new Fellows of the Institute.

Wednesday morning, Dr. J. Robert Oppenheimer, Director of Institute for Advanced Studies, Princeton University, spoke on "The Houses of Science." The panel on technological horizons included Architects O'Neil Ford, San Antonio; Burnham Kelly, Cambridge, Mass.; and George Fred Keck, Chicago. Dr. Oppenheimer illustrated his talk with some of the important changes which have been made on our culture by the fantastic growth of science. The exploding of our communities, the new problems in communications, and the swift changes that occur in a single lifetime were cited as parts of the problem which the application of new knowledge and techniques on technology and industry impose on the architect and others responsible for world environment. The public sector of culture which has traditionally been the province of high art, law, politics, philosophy, and worship is, according to Oppenheimer, in a state of erosion and change. The new responsibilities confronting the artist in general and the architect in particular to re-establish a continuity of culture, science, and knowledge, are massive and compelling in their need for action, he said. The session was followed by announcement of AIA award winners (p. 67 , MARCH 1960 P/A).

The professor of history at the University of Malaya, C. Northcote Parkinson, author of Parkinson's Law, was the major speaker for the Thursday morning session on political and economic horizons. His panel of architects included Maynard Lyndon and Robert E. Alexander of Los Angeles and Walter A. Netsch, Jr., Chicago. On Thursday evening, the Annual Dinner was given in the beautiful Garden Court of Palace Hotel. Following the dinner, the Gold Medal of AIA was presented to Ludwig Mies van der Rohe (p. 67, MARCH 1960 P/A).

Friday's session on philosophical horizons starred Dr. Morton White, professor of philosophy at Harvard, and panel architects Lawrence B. Anderson, Boston; Louis I. Kahn, Philadelphia; and John MacL. Johansen, New Canaan, Conn. Presentation of the Reynolds Award (see p. 74) and introduction of 1960 officers headed by the new president, Philip Will, Jr. (p. 75, FEBRUARY 1960 P/A) preceded lunch. The convention wound up in a burst of wine and glory at the Black and White Symphony Ball.



Gift to New York: A $500,000 Cafe in Central Park

Stone-Designed Project To Be Opposite Plaza

NEW YORK, N.Y. Huntington Hartford, the A&P tycoon, has announced his intention of giving New York a sidewalk cafe for Central Park. Mayor Robert Wagner and Park Commissioner Robert Moses accepted the gift. Designed by Edward D. Stone, the cafe will be located at the northeast corner of the park, across the street from the Hotel Plaza and overlooking the Sherman statue by Saint-Gaudens and the Pulitzer Fountain by Karl Bitter. Another Stone project commissioned by Hartford, the Gallery of Modern Art (page 79, JULY '59 P/A), will rise three blocks away on Columbus Circle.

The restaurant, to be known as the Hartford Pavilion, will be one story high on the street side and two stories high on the park side, where the land inclines steeply. It will have a flat roof sheltering galleries and terraces for outdoor dining. Sliding glass doors will open along the park and street sides.

The day after the announcement of Hartford's gift, *The New York Times* took editorial exception to the idea. Stating that ". . . we are against any more invasions into Central Park, so beloved by the public that it has become something special, something almost sacred," the *Times* said that the Hartford Pavilion should be kept out, just as the Tavern-on-the-Green, a high-priced restaurant now in the park, should be removed. Civic groups also have voiced opposition. Hartford, in announcing the gift, had evoked the Tivoli in Copenhagen, which is a delightful *bouillabaisse* of restaurants, theaters, puppet shows, exhibitions, shops, and other forms of amusement in addition to being a park. Maybe it *is* time to redevelop the Park!

NERVI DESIGNS BUS STATION FOR NEW YORK

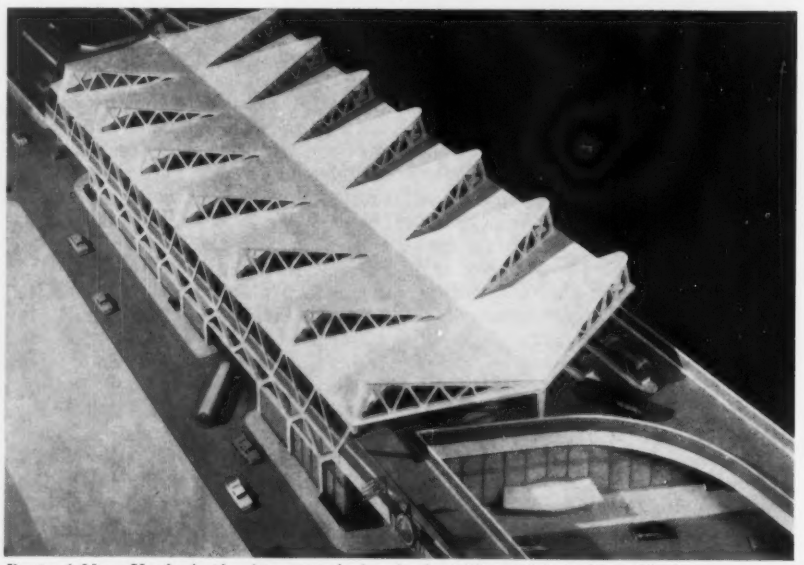
NEW YORK, N. Y. A two-block-long, three-level bus station of precast concrete has been designed for New York by Dr. Pier Luigi Nervi.

The station is part of a project now under construction to provide a six-lane lower level expressway to George Washington Bridge, which connects upper Manhattan and New Jersey. It is estimated that when the entire project is finished, the station will have a traffic of 2,000 buses and 50,000 people daily—200 buses and 10,000 passengers in a peak hour.

The roof of the station will be composed of 26 precast concrete sections, 12 flat and 14 extending upward from a row of columns at building's center. Sides of the raised roof sections and of the stations will be exposed precast members open to provide ventilation for bus platforms and the expressway beneath the building.

The lowest level of the station will have a subway entrance and long-haul bus facilities at street level. The main concourse will be on the second level. The bus operating and boarding level will be at the top, reached from the concourse and the subway entrance by moving stairs. An elevated bus-turnaround will be provided.

Detail of model shows Nervi's mastery of concrete as design medium.



Port of New York Authority commission is first Nervi job in New York.

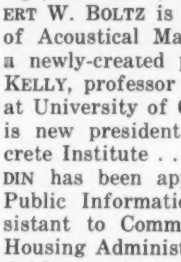
PERSONALITIES

The co-designer (with partner André Fouilhoux) of the Trylon & Perisphere for the 1939 New York World's Fair will be Chairman of Design Board for the proposed 1964 World's Fair in the same city. Overseeing and co-ordinating other architects' work has become practically a fulltime job for **Wallace K. Harrison.** He was Director of Planning for United Nations headquarters, is Consultant to the Port of New York Authority on design of New York International Airport, and is co-ordinating architect for Lincoln Center for the Performing Arts (for which he is designing Metropolitan Opera House, main building of the complex). Sixty-five-year-old Harrison began his architectural career in the office of McKim, Mead & White, studied at l'Ecole des Beaux Arts, Paris, and American Academy in Rome. He received a big boost in 1929 when his firm, Corbett, Harrison & MacMurray, was chosen as one of three to collaborate on Rockefeller Center (the other firms were Reinhard & Hofmeister and Hood & Fouilhoux). Before serving first as assistant coordinator (under long-time friend Nelson Rockefeller) then director of Office of Inter-American Affairs during World War II, Harrison was associated with André Fouilhoux for six years. In 1946 his present firm, Harrison & Abramovitz, was established (see page 53, JANUARY 1960 P/A for data on Partner Abramovitz). On the World's Fair job, Harrison will be assisted by Gordon Bunshaft and Edward D. Stone.

EDGAR TAFEL, New York, who is frequently interviewed for the pages of *The New Yorker*, appeared coast-to-coast recently on "Today" TV show, giving a short history of church architecture . . . . CHARLES LUCKMAN, Charles Luckman Associates, Los Angeles, was appointed to California Gov. Pat Brown's Commission on Metropolitan Area Problems . . . . For "his outstanding service to the architectural profession," the 38th Annual Report of National Council of Architectural Registration Boards was dedicated to AIA Fellow SHERLEY WARNER MORGAN. . . . At its annual inaugural banquet, The Architectural League of New York awarded the Michael Friedsam Medal in Industrial Art to WALTER PAUL PAEPCKE, Chairman of Board, Container Corporation of America. Paepcke died April 14 in Chicago.

Designer HERBERT ROSENTHAL, Los Angeles, is Chief Exhibition Designer for Century 21 World's Fair Exposition to be held in Seattle in 1962 . . . . Series of engineering lectures named in honor of sponsor IRVAN F. MENDENHALL (Daniel, Mann, Johnson & Mendenhall, Los Angeles), has been established at Harvey Mudd College, Claremont, California . . . . ROBERT W. BOLTZ is Technical Secretary of Acoustical Materials Association; a newly-created post . . . . JOE W. KELLY, professor of civil engineering at University of California, Berkeley, is new president of American Concrete Institute . . . . C. WILLIAM CARDIN has been appointed Director of Public Information and Special Assistant to Commissioner of Federal Housing Administration . . . . A 1960 Achievement Award was given to SEYMOUR MILSTEIN, president of Mastic Tile Division, The Ruberoid Company, by his alma mater, New York University . . . . Argentinian WILLIAM ALONSO has been named Assistant Professor of Regional Planning at Harvard by Dean José Luis Sert . . . . Former Federal Highway Administrator JOHN A. VOLPE was elected president of Associated General Contractors of America; he'll have his hands full for the next few months, since he is also running for the Republican nomination for Governor of Massachusetts . . . . PIETRO BELLUSCHI is a new vice-president of National Institute of Arts and Letters.

Awed not a bit by the responsibilities of directing the destinies of The American Institute of Architects for two consecutive terms as president, **John Noble Richards** during his tenure happily accepted honorary memberships in Royal Architectural Institute of Canada, Mexican Society of Architects, and Institute of Philippine Architects. Hardworking Richards, who turned over his gavel to Philip Will Jr., at last month's AIA Convention, was one of the travellingist, speakingist presidents on record. His good work in keeping architecture before the public has won the admiration of the profession, and can serve as a model for future presidents. Aside from running the world's largest architectural organization, Richards's activities are quite catholic: he is on the board of Toledo Zoological Society, Toledo Repertoire Theater, and Village Players; a member of three architectural fraternities, he also serves with Toledo Building Congress and Downtown Toledo Associates. Even while AIA president, he, in association with other Toledo architects, devised a model proposal for the redevelopment of Downtown Toledo.



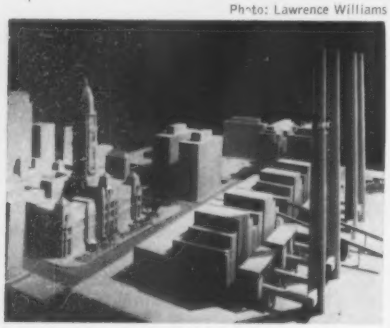
Not content with being the country's youngest top-rank redevelopment entrepreneur, **James Scheuer** is increasingly turning his time and talents to the art of politics. A leader in the reform movement of New York's Democratic Party, Scheuer defines his political ideals as "broad-scale private participation in public affairs," and implementing the relationship between the citizen and his government. Bringing his special knowledge of renewal problems into the political arena, he notes that what has been done in urban renewal has produced homogeniety at lowest level—mostly public housing. What is needed for the 15-million units to be renewed in the United States, he thinks, is heterogeniety of family size, income groups, race, types of tenure, and background of tenants. To Scheuer, the Title I program is the organizing factor, the framework, under which this can be done. As head of Renewal and Development Corporation, he now has projects on the boards or under construction in St. Louis, Washington, D. C., San Juan, Puerto Rico, Cleveland, Sacramento, and Marin City, California. The last two projects won the top P/A Design Award in 1959 and 1960, respectively. Born in 1920 on "Manhattan's teeming West Side," Scheuer received an AB in economics from Swarthmore in 1942, a degree in Industrial Administration from Harvard in 1943, and a Bachelor of Laws from Columbia in 1948. Serving with Overseas News Agency in Italy after the war, he contracted polio and was put in a convent-nursing home in Rome, "where I lived on zucchini and water for 30 days." The treatment was evidently efficacious, for the slight limp he retains does not prevent him from being one of the most protean developer-politicians on the East Coast.

Sketches by Romano Corbellini

Architect Consults on TVA Steam-Plant Design

Don't get excited: this TVA steam plant, for which Philadelphia architect Vincent G. Kling is design consultant, is not going up opposite that city's grand old City Hall. It will be built in Paradise, Kentucky (photo simply shows comparative size). This

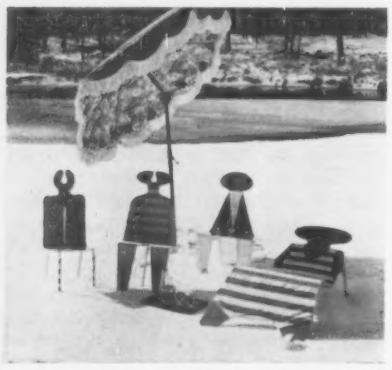
Photo: Lawrence Williams



is said to be the first time TVA directors have employed an outside architectural-design consultant. The plant will house the largest turbo-generator in captivity, with a 600,000-kilowatt output. Kling was previously design consultant on the hydroelectric plant and irrigation dam on the Dez River in Iran, a puny 520,000 kilowatter.

Forecast Collection Shows "People Chairs"

This is not a convocation of the Putney, Vermont, Polar Bear Club; it is a group of playful "People Chairs" designed for the Alcoa Forecast Collection by Jay Doblin, chairman of the Institute of Design, Illi-



nois Institute of Technology. Three of the chairs are folded from a single piece of aluminum, rather than assembled from components. They are not on the market, having been designed simply to demonstrate the versatility of the material.

NEW ORGANIZATIONS

Copper Products Development Association, Inc., "for expansion of uses of copper and copper products, and the development of new and improved copper products," was formed in New York. Six major copper producers are charter members . . . . Eduardo Torroja of Spain is first president of recently-formed International Association for Shell Structures; information may be obtained by writing the Secretariat of the group, Alfonso XII, 3, Madrid (7), Spain . . . . National Particleboard Association, Washington, D. C. named as its president David C. Greeley of Weyerhauser Company . . . . Six manufacturers of residential exhaust fans have formed themselves into the Home Ventilating Institute under current president Ralph Pryne of Emerson-Pryne Company . . . . Steel Service Center Institute was adopted as new name of American Steel Warehouse Association to indicate broadened aims of group.

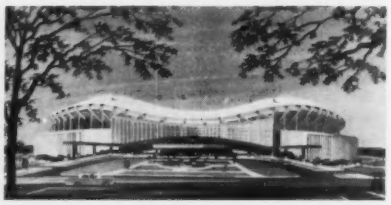
Photo: Frank Lotz Miller

Louisiana Church to Have Elliptical Sanctuary

Sanctuary and chapel of Lake Vista Methodist Church in New Orleans will be additions to remodeled education building. Folded-plate concrete roof of sanctuary will be supported by concrete columns describing an ellipse. The sanctuary will be enclosed in a decorative screen behind the columns. Light entering through the screen will also filter through cathedral glass. The chapel will have a skylight covered with a pleated peak of concrete. Construction of the church, designed by August Perez & Associates, starts next month.

Wavy-Roofed Stadium Proposed for Capital

District of Columbia Stadium, designed for Washington by Dallas Architect George A. Dahl, will be almost perfectly circular, measuring 750 ft in diameter from outer wall to outer wall. Roof over upper deck will be cantilevered inward 62 ft from



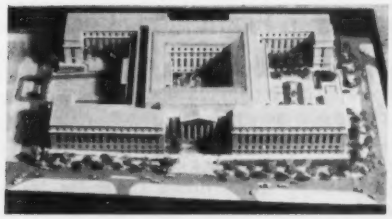
outer edge. Steel supports will be supported in turn by reinforced-concrete bents. Reinforced-concrete slabs of roof will be poured in place 120 ft above natural grade, 135 ft above depressed playing field. Capacity will be 42,500 for baseball and 50,000 for football. Parking will be provided for 12,500 cars. Moving sidewalks and ramps will carry sports fans to upper levels of two-deck seating arrangement. Engineers are Ewin Engineering Associates, Washington, and The Osborn Company, Cleveland.

Block-Long Plaza Set For Chicago

New, 25-story building proposed for Chicago will introduce a block-long pedestrian plaza into the heart of that city's financial district. Exposed colums clad in white Vermont marble will rise the full height of the building to meet a cornice of the same material. A gray-glass curtain wall in anodized-aluminum mullions will occur between the columns. Peripheral offices will have practically floor-to-ceiling windows overlooking the Loop. A. Epstein & Sons has provided one level below grade for parking and tenant storage.

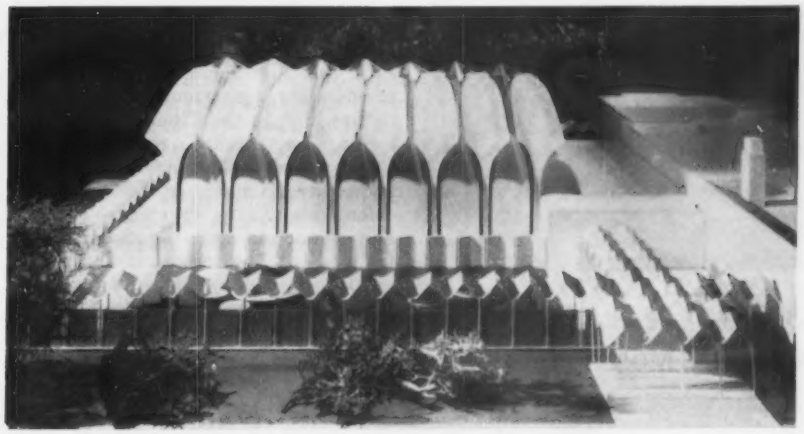
The House Gets One, Too

With complaints about the new Senate Office Building still ringing in his ears, intrepid Engineer J. George Stewart, Architect of the Capitol, is



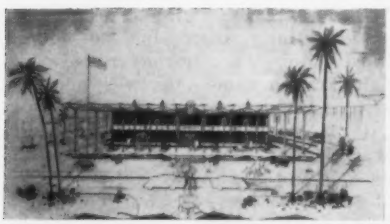
already well into construction of the new office building for the House of Representatives. The monolithic structure will provide 2,375,000 sq ft of gross area, including three parking levels. The design, described as "simplified Classical," includes a central court, an entrance court, and a fountain court. Exterior façade will be white marble with a granite base, except in the central courtyard, where facing will be limestone. Associate architects are Harbeson, Hough, Livingston & Larson, Philadelphia; landscape architects, also of Philadelphia, are Robert Wheelwright, Markley Stevenson & J. W. Langran.

Incidentally, the Congressmen will get a subway to the Capitol (just like the Senators) when the building is completed. We guess that puts us ahead of the Russians in legislative transport!



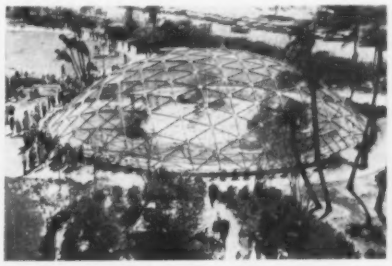
YAMASAKI DESIGNS ILLINOIS SYNAGOGUE

Design by Minoru Yamasaki for the sanctuary for North Shore Congregation, Glencoe, Ill., represents a dramatic addition to existing, educational facilities. The sanctuary will be bounded by an eight-ft wall and a folded-plate-roof arcade provided, Yamasaki says, to give "a pleasant transition between the sanctuary building itself and the residential neighborhood." The building itself will be constructed of large fan vaults of precast concrete. Interstices at the roof will create glass skylights, beneath which will be an interior dome of stained glass. Gardens will occur at each long side of the building; at the south side will be a water garden, and at the north will be landscaping. A future addition is another classroom building which will adjoin present facilities at the north end of the side. A landscaped playground will separate the two projects.



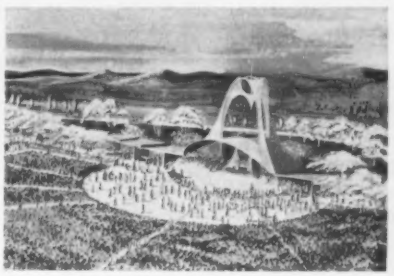
Embassy for Brasilia by California Architect

First-prize winner in an international competition for the design of the Lithuanian Embassy in Brasilia is Edmund Arbas, Sacramento. The precast-concrete structure will be built on Brasilia's "Embassy Row," Avenue of the Nations, between the Indian and Greek embassies. The two-story building will have offices and administrative functions on the ground floor and living quarters and a 150-capacity auditorium/chapel on the second floor. The basement, which will be given light and air by raising the building on a podium, will contain library, guest rooms, housekeeper's quarters, and stock rooms. The Lithuanian seal will interrupt the roof line above the entrance, and panels celebrating different Lithuanian cities will be placed on panels between the floors. A reflecting pool will be centered before the embassy.



Florida Space Frame Is For the Birds

A gold-anodized-aluminum geodesic dome has been constructed in Tampa, Fla., to house storks, cranes, and other rare birds of Busch Gardens, a tourist attraction featuring many kinds of avians. It is named after that benefactor of mankind, Adolphus Busch, co-founder of the Anheuser-Busch beer business. In fact, it is next door to one of the places where they make the happy sauce. The structure is covered with two-in. square mesh, also of gold-anodized aluminum. Facilities for the birds inside include a pool, aluminum stork nests, shelters, and model roof and chimney to serve as a stork roost. The 99-ft diameter, 20½-ft high dome is floodlighted inside and out at night. It was designed, fabricated, and field-erected by Graver Tank and Manufacturing Company, Division—Union Tank Car Company.



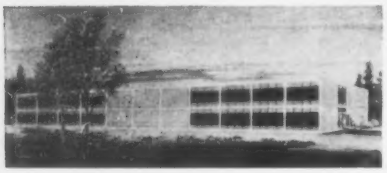
Ciborium Will Be Center Of Illinois Shrine

Focal point of pilgrimage center of the Marian Shrine of Our Lady of the Snows, Belleville, Ill., will be a 50-ft-high concrete vault housing the central altar. First-stage requirement of the project includes, in addition to the ciborium and its 15,000-capacity amphitheater, an indoor chapel, clergy and choir facilities, and six outdoor chapels (or secondary shrine areas) on either side of the sanctuary. Architects-engineers are Maguolo & Quick; structural engineers: Eason, Thompson & Associates; landscape architects: Layton, Layton & Rohrback.

Continued on page 82

3rd-League Stadium Plans OK'd by Moses

A horseshoe-shaped stadium to accommodate 55,000 spectators has been approved by Robert Moses, outgoing Commissioner of New York's Department of Parks, for Flushing Meadows Park, Long Island. Major users of the stadium would be the proposed Continental League, third major baseball league. Facilities would also be convertible for other uses such as football, soccer, cricket, track, and bicycle races. The stadium, designed by Praeger-Kavanagh, will be built to support a sectional metal roof for protection in inclement weather.



SOM DESIGNS FOR GE

New Chemistry and Metallurgy Building now under construction at General Electric's Vallecitos Atomic Laboratory in Pleasanton, Calif., was designed for research and special projects using radioactive materials. Skidmore, Owings & Merrill, San Francisco, provided a two-story structure of reinforced concrete framing, with non-bearing exterior walls of precast concrete. Windows occur in office areas; laboratory areas are windowless to provide a fully-controlled working environment. Special air handling features are provided for comfort and protection of personnel. Completition is expected in October. H. K. Ferguson Company is General Contractor.

Skid Row Gets Bum's Rush

Possibilities for eliminating its Skid Row were recently studied by the City of Chicago under an HHFA demonstration grant. Although the study points up significant features of a particular Skid Row, its findings can be applied with equal validity to similar areas throughout the country.

Comm. D. E. Mackelmann, of Chicago's Community Conservation Board, discussed these findings at the annual meeting on the Homeless and Institutional Alcoholic, held in New York by National Council on Alcoholism. (One of the surprising disclosures that Commissioner Mackelmann made to his hosts was the fact that occupants of Chicago's Skid Row are not predominantly alcoholic—43% either do not drink at all or drink only occasionally.)

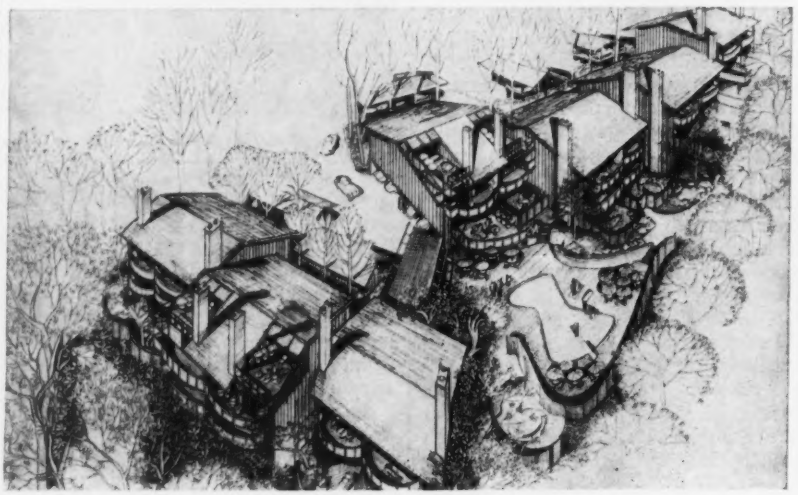
Chicago's Skid Row population has diminished over the past 50 years from 2.2% to .3% of the total city population. Many of them are now long-term residents, representing another reversal from the situation of 1910, when men tended to migrate to other cities more frequently, or at least to move out regularly for brief working seasons before returning to a new address on Skid Row. At present, there is a vacancy rate of 20% in the "cubicle hotels" housing many of the people, which gives some leeway for an urban renewal that does not create undue relocation problems.

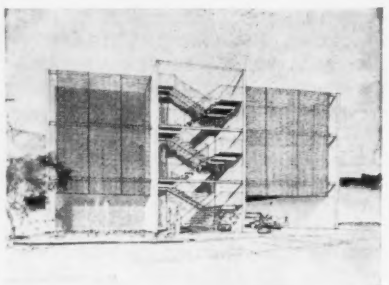
This is an important factor in the removal of existing Skid Row areas. Since older neighborhoods of a city are extremely susceptible to downward changes, a city may remove its Skid Row in name only, with another area assuming its same character.

It is the belief of Commissioner Mackelmann that a Skid Row can be obliterated only by an expansion of social services—treatment centers, "half-way houses," advisory offices, etc.—that is simultaneous with its physical urban renewal.

Apartments Will Rise High Above San Francisco Bay

A delightfully romantic group of 34 co-operative apartments is scheduled to rise high in the Tiburon hills overlooking Belvedere Lagoon in Marin County, Calif. The apartments, designed by Campbell & Wong, will be oriented south to sweeping views of San Francisco and the Bay. Warm feeling will be provided by shake roofs, redwood board-and-batten siding, brick fireplaces. Apartments will have either spacious decks or bricked gardens, accessible from window-walled living-dining rooms. Privacy is insured by staggering two- and three-story units down the hilly terrain. A community pool will be provided between the two clusters of units. Danish steel lamps will light the driveways and the main entrance.





Outside Stairway Will Decorate Building

New Beverly Hills office building is characterized by luxurious details and facilities. Open garden courts, water garden with decorative sculpture and shooting water jets, and decorative

sunscreens on two sides of building provide elaborate detailing. Building is fully air-conditioned; conference rooms are skylighted; and partition walls and ceilings are acoustically treated and fireproofed. Exterior metal staircase provides focal interest for façade.

Construction is structural-steel frame with reinforced-masonry side walls. Concrete-pan-joist ceiling of basement parking area has sprinkler system.

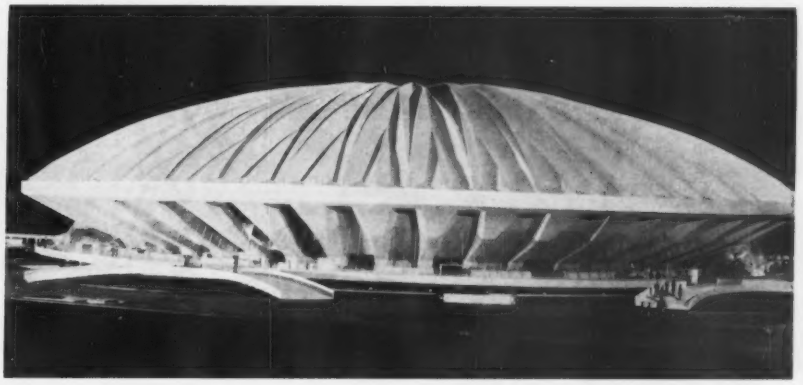
Richard Dorman & Associates, architect as well as prospective tenant, expects completion in May 1960.

Unique Advisor Setup for Golden Gateway Project

Last month, San Francisco Redevelopment Agency heard proposals for the redevelopment of Golden Gateway area (pp. 79-81, APRIL P/A). Architects Lawrence Anderson, Henry S. Churchill, Mario J. Ciampi, Louis I. Kahn, Morris Ketchum, Jr., and Minoru Yamasaki, and Realtor Ferd Kramer met with the Agency, April 25-28, to evaluate nine proposals submitted by developers and their architects. The panel, rather than acting in a judging capacity, evaluated each proposal without indicating any priority of preference. Panel members are editing their observations now, and the chairman will submit a report to the agency on May 31.

Assembly Hall Will Be Bowl Surmounted by Dome

The University of Illinois Assembly Hall, designed by Harrison & Abramovitz, will be adaptable for theatrical performances, basketball games, fairs and exhibitions, and large-scale convocations seating up to 19,000 persons. The hall will be in form of a partially below-grade bowl topped by a prestressed concrete dome. Horizontal reactions of the 400-ft-span dome will be carried in post-tensioned ring girders. The pleated form of the dome, in addition to being visually pleasing, will perform an "assist" in strengthening the structure. Circling the exterior at ground level will be a glass-and-steel enclosed concourse which will also provide facilities for exhibits and fairs. The floor level beneath the concourse will house offices, a dining area, ticket offices, and other public spaces. Consulting engineers are Amman & Whitney; mechanical engineers: Syska & Hennessy. Completion is scheduled for 1961.



CALENDAR

Seminar on Thin Shell Concrete Structures will be held at Case Institute of Technology, Cleveland, July 18-22 . . . . Design Engineering Conference, New York, May 23-26 . . . . World Congress of Housing and Planning, San Juan, P. R., May 28-June 3 . . . . Seminar of architectural and engineering aspects of atomic shelter, Pennsylvania State University, University Park, July 10-22.

Connecticut Firm Designs School for Guatemala

Sherwood, Mills & Smith, Stamford, Conn., has designed the American School in Guatemala City, Guatemala, a project sponsored jointly by the U.S. Government, the Guatemalan Ministry of Education, and private sources. The school, which will serve children from kindergarten age through senior high school, will be a series of corridorless buildings grouped around individual landscaped courts. Classrooms will open directly onto exterior walks protected by deep roof overhangs. Roofs will be thin-shell, reinforced-concrete hyperbolic paraboloids, one over each bay. The entrance plaza will be surrounded by administrative and research departments, library, and a large combined auditorium and cafeteria. A gymnasium and swiming pool will lie behind the latter unit.

Instant Tradition

While the Senate's debate over Civil Rights effectively brought all legislative business to a standstill in the first weeks of March, Washingtonians got happily embroiled in another of those odd battles between tradition and progress that seem to be a special province of the Capital City.

Involved this time were two blocks of city area, on either side of Lafayette Park, facing the White House across Pennsylvania Ave. Most prominent on the westernmost of these two blocks is James Renwick's brownstone and red brick building, erected in 1859 to contain the Corcoran art collection, but which has housed the Court of Claims for many years. On the easterly block, among structures that would be demolished (for a new Court of Claims building) stand the long-closed Belasco Theater (1895) and the much remodeled "Dolly Madison House" (1820).

Said an official of General Services Administration: "Amazing how quickly tradition gathers around anything that's to be torn down."

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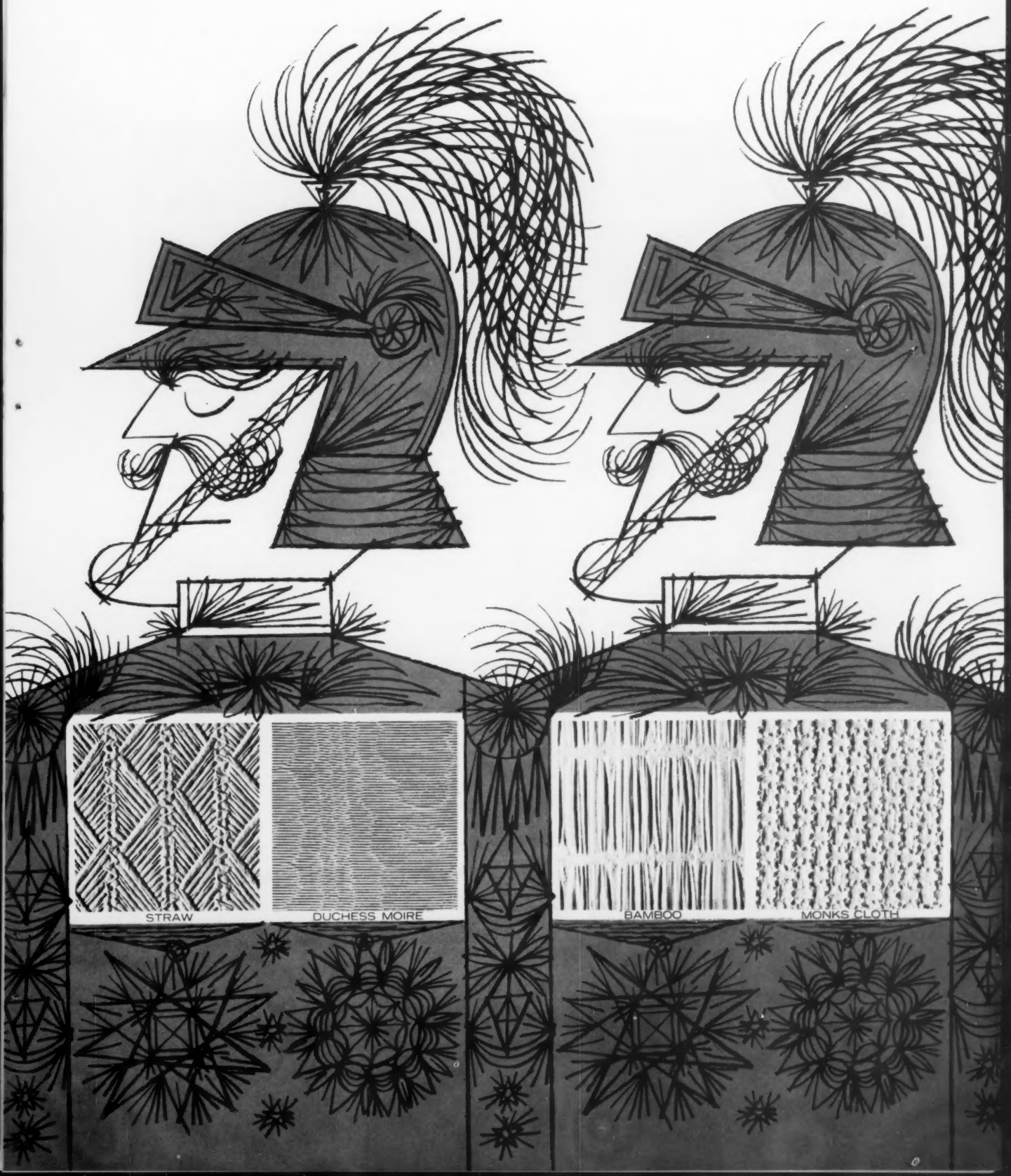

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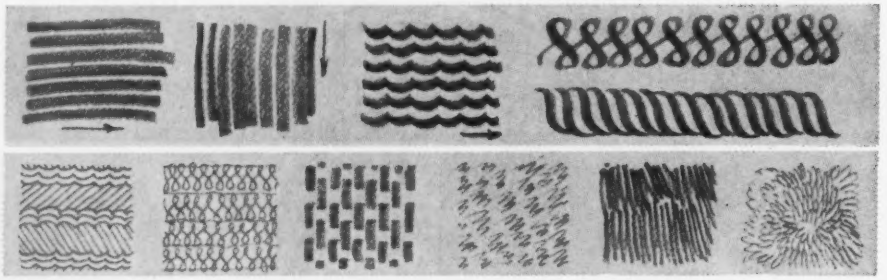

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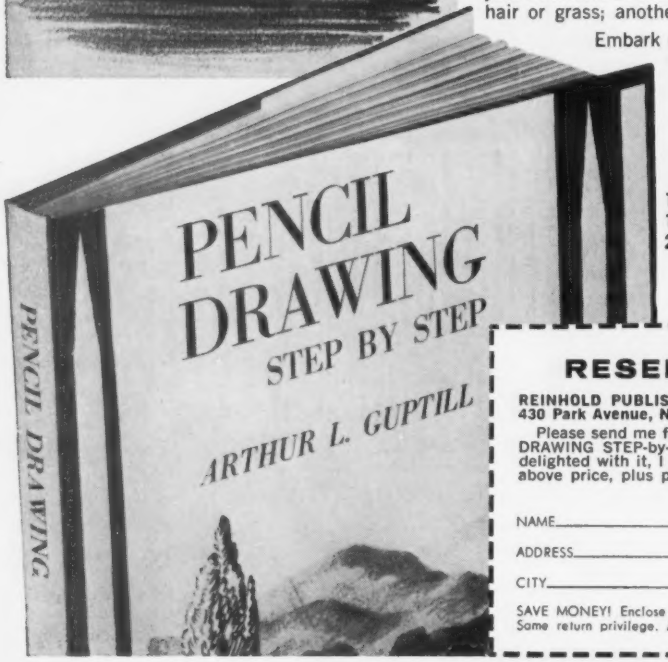

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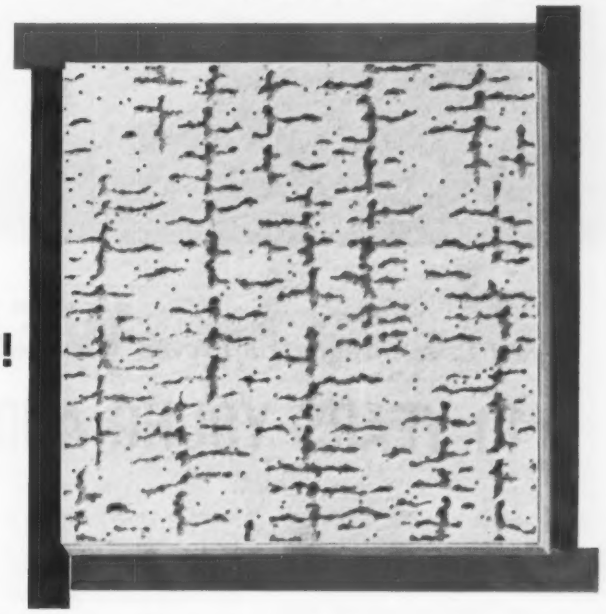

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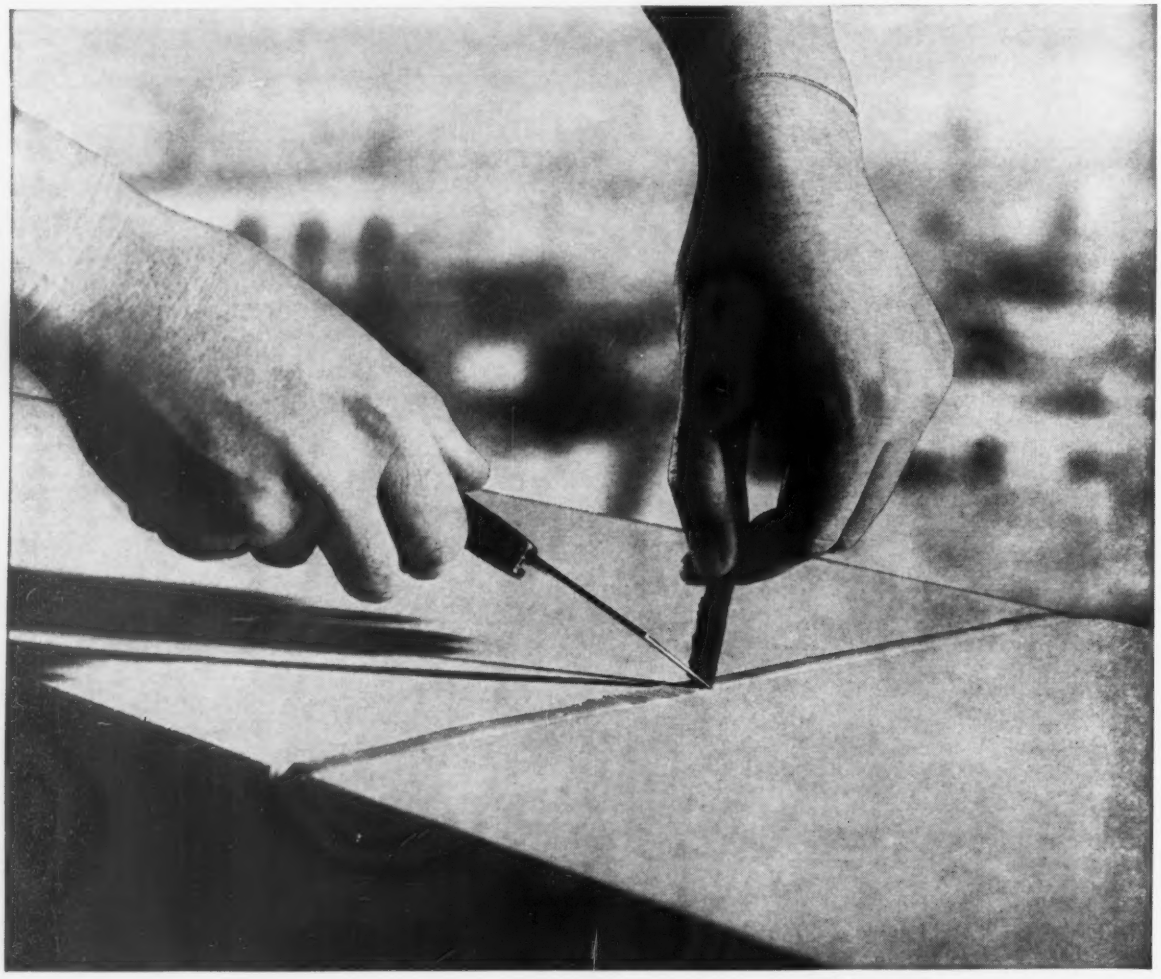

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Housing Prospects Rise Despite Congress's Inaction

Civil Rights, Politics Dominate Capitol Hill

By E. E. Halmos, Jr.

During the curious period of what might be called furious inactivity in Washington for the past several months, housing has been making most of the significant news. The long period of legislative futility has centered around the skilfully-led debate over civil rights (with which much legislation, like school aid measures, is closely tied) has resulted in a record—in more than half the session so far—of only one major piece of legislation passed. And that (the Blatnik stream-pollution measure) was promptly vetoed.

Meanwhile, however, this has happened on housing:

First, National Association of Home Builders took Washington by surprise by advocating full support of bills now before Congress (principally HR 10590) that would lift the existing ceiling on Government bonds from 4½ percent, by permitting the Treasury, in effect, to get the best price it can for new bond offerings.

NAHB's move came in a general letter to members and word to Congress—and represented a major reversal of long-standing policy, despite President Martin H. Bortling's disavowal of any intent to make such a change.

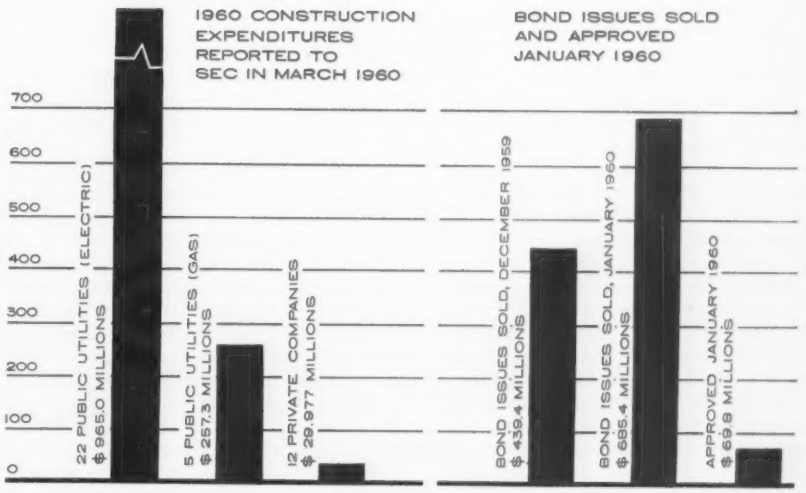
Reason: unless Treasury is given a freer hand in managing the public debt, tighter mortgage money and higher interest rates will come.

Second, Sen. Joseph S. Clark (D. Pa.) introduced a new bill (S 3292) that would establish a Cabinet-level Department of Housing and Metropolitan Affairs, which would take over all present federal housing activities. There's no great probability that the bill will reach passage before Congress adjourns—but it is very similar to one proposed last session by New York's Keating (which would have set up a "Department of Urbanization").

Third, there was definite evidence of an upturn in housing construction. Backing up a statement by Housing Administrator Norman P. Mason to the effect that a housing upturn is due within two months, FHA's research and statistics branch reported that applications for mortgage insurance increased during February, by a nationwide average of 17 percent over January.

Fourth, National Association of Real Estate Boards urged FHA to allow individuals to own FHA-insured mortgages (which can now be held only by approved mortgagees capitalized at $100,000 or more), thus tapping a "substantial and entirely new source of investment funds."

Fifth, Housing and Home Finance Agency warned homebuilders that people, rather than structures, are the end objective of housing programs: much must be learned about needs of special groups, such as the elderly and low-income groups, before the final word is said about housing.


1960 CONSTRUCTION EXPENDITURES REPORTED TO SEC IN MARCH 1960
BOND ISSUES SOLD AND APPROVED JANUARY 1960
700
600
500
400
300
200
100
0
22 PUBLIC UTILITIES (ELECTRIC) $ 965.0 MILLIONS
5 PUBLIC UTILITIES (GAS) $ 257.3 MILLIONS
12 PRIVATE COMPANIES $ 29.977 MILLIONS
BOND ISSUES SOLD, DECEMBER 1959 $ 439.4 MILLIONS
BOND ISSUES SOLD, JANUARY 1960 $ 685.4 MILLIONS
APPROVED JANUARY 1960 $ 69.8 MILLIONS

BOND ELECTION RESULTS – JANUARY 1960 BY USE OF PROCEEDS

USE OF PROCEEDS	APPROVED		DISAPPROVED	
	AMOUNT	NO.	AMOUNT	NO.
EDUCATION:				
ELEM. & SEC.	$ 28,753,000	36	$ 4,541,000	9
ROADS & BRIDGES	200,000	1	2,350,000	1
WATER & SEWER	4,915,000	5	3,089,000	2
OTHER UTILITIES	30,000,000	1	100,000	1
HEALTH & WELFARE	535,000	2	2,314,000	2
RECREATION	75,000	1	39,000	1
INDUSTRIAL	5,330,000	3	———	0
UNCLASSIFIED	10,000	1	———	0
TOTALS	$ 69,818,000	50	$ 12,433,000	16

BOND ELECTIONS SCHEDULED AS OF FEBRUARY 1, 1960

MONTH	AMOUNT
FEBRUARY	$ 45,658,000
MARCH	34,679,000
APRIL	22,633,000
MAY	34,248,000
JUNE	4,847,000
NOVEMBER	345,000,000
NO DATE SET	10,862,000
TOTAL	$ 497,927,000

USE OF PROCEEDS	AMOUNT
EDUCATION:	
ELEM. & SEC.	$ 93,393,000
OTHER	198,892,000
ROADS & BRIDGES	460,000
WATER & SEWER	24,397,000
HEALTH & WELFARE	156,535,000
RECREATION	11,710,000
PORTS & AIRPORTS	6,030,000
INDUSTRIAL	2,300,000
FLOOD CONTROL	600,000
UNCLASSIFIED	3,610,000
TOTAL	$ 497,927,000

Pack-Up-Get-Out Congress

The comment above about "furious inactivity" in Washington's legislative

halls can be easily demonstrated. And it is a factor that should enter your thinking about what Congress finally does during what's left of this session. Unfortunately, the result of a little simple arithmetic indicates that Congress is going to accomplish very little.

The facts are these: as of mid-April, something over 5000 bills had been introduced (to be added to nearly 10,000 left over from last session). Of these, just 20 had been enacted into law—and only one of those (the vetoed stream-pollution measure) had any real national significance.

Add to this the fact that Congress will definitely adjourn in July—no Congressman wants to miss the political conventions that month, or to delay the start of his campaigning.

So the few months remaining are really a very short time for the complex and often cumbersome machinery that's needed to get even the most routine legislation through the mill.

The conclusion, then, has to be this: Congress will put through the necessary appropriations bills, and nothing but legislation that looks as if it has the makings of a good political issue. Everything else will be bypassed in the rush. And, since the Congress that meets next January will be a new Congress (87th), anything not acted upon now is dead.

Political thinking of this sort, by the way, is behind both the better chances for tax-help to the self-employed, and the apparent end to Rep. Aime Forand's bill to liberalize social security to pay hospital and nursing care for the aged.

A bill that would help self-employed (which includes farmers and small businessmen, as well as professionals) by permitting them to deduct costs of retirement programs would be popular with a large number of influential voters. No help for the aged—which can be blamed entirely on the Administration's adamant opposition—will make a good point on which to attack the Administration's record.

On "Frilly" Hospitals

Local pride is largely responsible for incorporation of needless and expensive frills in hospital construction. That's a statement—not startling to architects — to Congress by the U.S. Public Health Service, in answer to sharp committee questioning on new appropriations for hospital construction under the Hill-Burton Act.

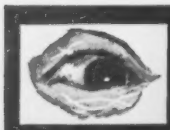
Surgeon-General Leroy E. Burney, backed by Dr. James V. Lowry, chief of the Bureau of Medical Services, agreed that PHS tries to keep out "fancy" innovations (like built-in high-fidelity record systems, marble corridors, and gold-plated awnings) but "usually gives in" if the local hospital insists, and can pay, "within reason."

Aid for Saarinen's Arch

Eero Saarinen's soaring "Gateway to the West," planned for St. Louis Mo., got a welcome boost in the Senate, with passage of HR 10401, the appropriations bill for Department of Interior and related Agencies.

Senators approved committee-recommended changes that upped the appropriation for continuing the work from the $1.6 millions sought in the President's budget to $4.7 millions. The House had previously passed the bill with the smaller amount intact—the Senate bowed to the pleas of the Missouri delegation that the project—under way after more than 20 years of negotiations and off-again-on-again

Continued on page 92



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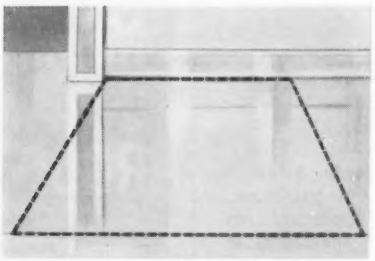

FIGURE 1

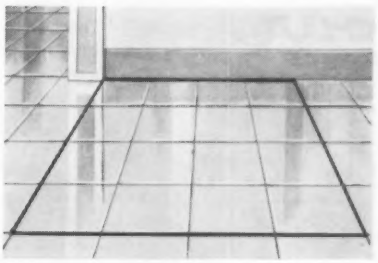

FIGURE 2

If you were a "staph" germ, where would you hide?

. . . in any crack where germs can harbor and multiply. There are 32 times as many potential hiding places in a 9″ x 9″ tile floor (Figure 2) as in a square yard of *sheet rubber flooring* (Figure 1).

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Continued from page 90

federal approval—shouldn't be curtailed now.

A conference committee will have to iron out the differences.

Getting Around in D.C.

The City of Washington's growing transportation problems—as you know, the two million-plus metropolitan area is dependent entirely on surface lines and private automobiles—finally has gotten some real boosts, in the form of an Administration-backed bill *(S 3193)* that envisages an eight-year, $265 millions federal investment in construction of at least one subway line, and acquisition of right-of-way for other transit facilities.

The way the bill is worked out—to satisfy everyone who's been critical of federal expenditure on such a project, is interesting: first, an agency with limited powers concerned primarily with planning would get funds, while negotiations went on for an interstate compact (Virginia, Maryland, and District of Columbia would be involved). Then—if an interstate agency hasn't yet evolved, a successor federal agency would come into being with broader powers. Finally, a corporate body would take over to build and operate the planned system, using federal funds, bonds and revenues for financial support.

Air Force Air

All unitary air-conditioning equipment to be used, from now on, by the Air Force, will be required to carry certification from the Air Conditioning and Refrigeration Institute (ARI).

Provisions for the new certification are spelled out in *Air Force Pamphlet 91-2-1*. In the future, specifications for this type of air-conditioning equipment ("unitary" is defined as consisting of one or more factory-made assemblies, which normally include an evaporator or cooling coil and a compressor and condenser combination) should include a sentence to the effect that ARI certification is required.

Technical Pay Hike

Federal government — already the largest single employer of technically-trained people—will raise its salary rates for engineers and scientists, in order to compete on better terms with private employers. Civil Service Commission has announced that minimum pay rates for GS-5 and GS-7 grades (entering grades for most new engineering employes will go up roughly $450 a year, to $4940 and $5880, respectively.

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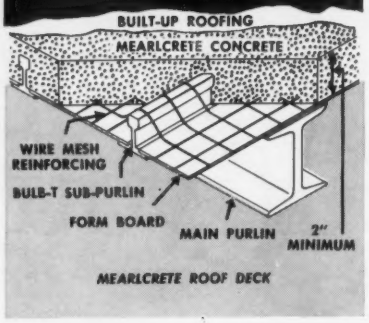

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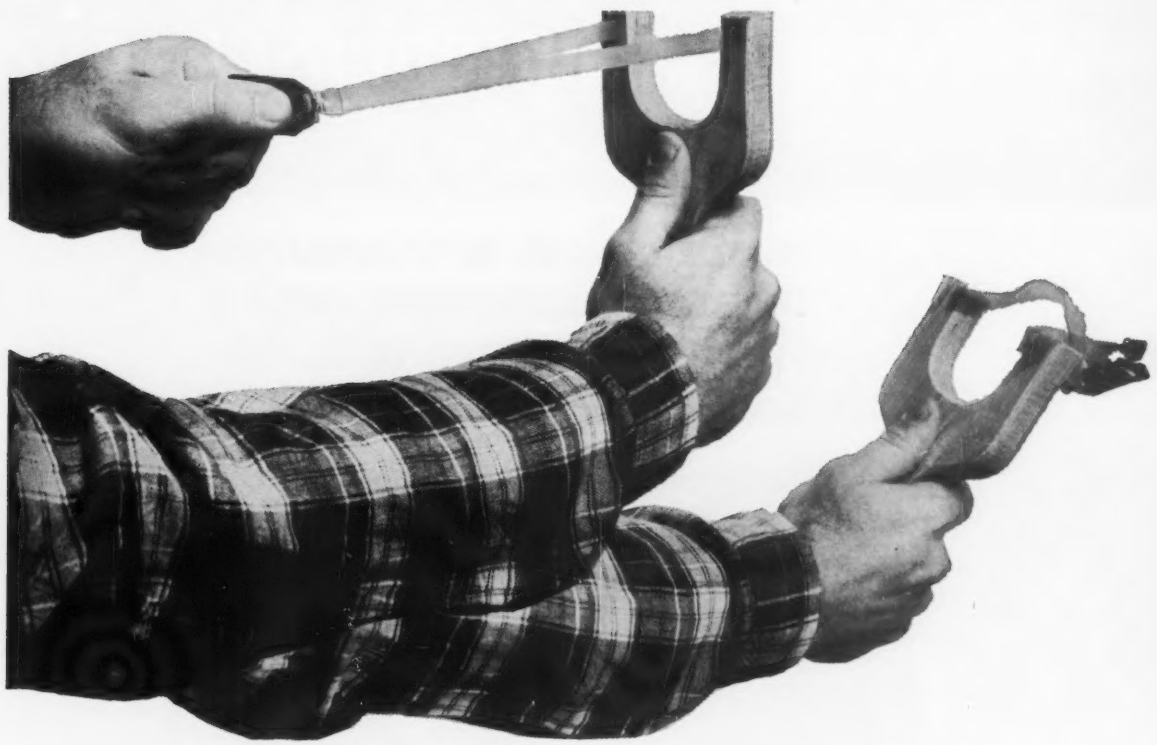

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STRUC*SURE*SEAL offers you this kind of modulus control: *predetermined elasticity to match your particular installation needs.* There's a STRUC*SURE*SEAL for use in normal expansion joints and for glazing. Then there's another for extreme movements, in cold weather. All are designed for maximum adhesion to dissimilar surfaces.

We will help you select the proper STRUC*SURE*SEAL for your requirements. Tell us about your problem. Our building construction technicians will be pleased to help you. Write, call or wire.

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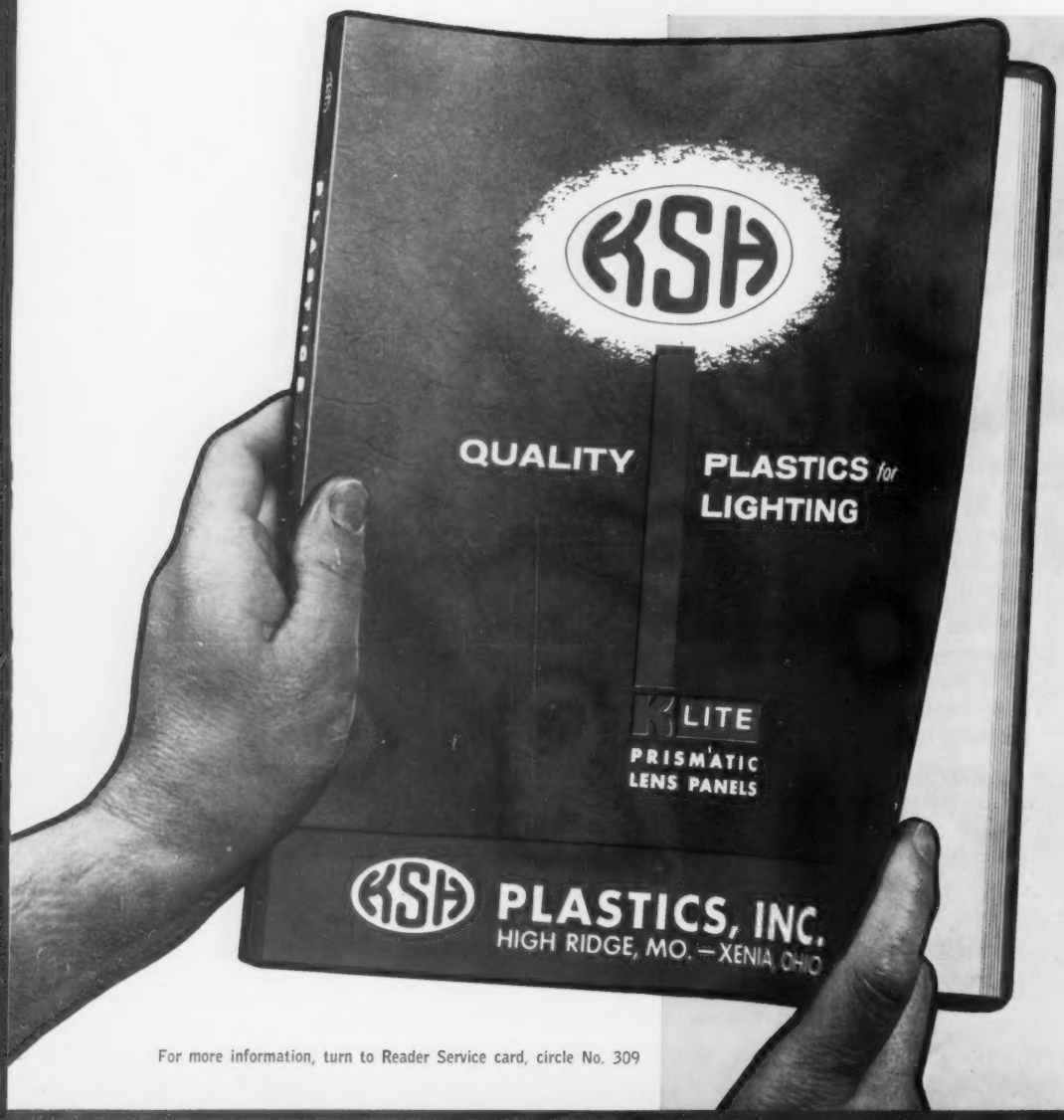

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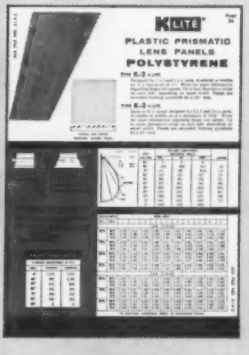

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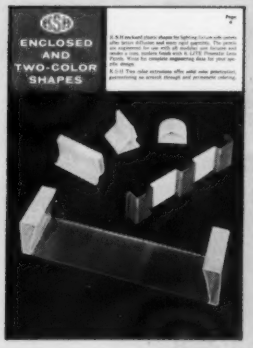

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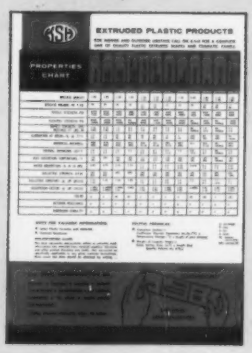

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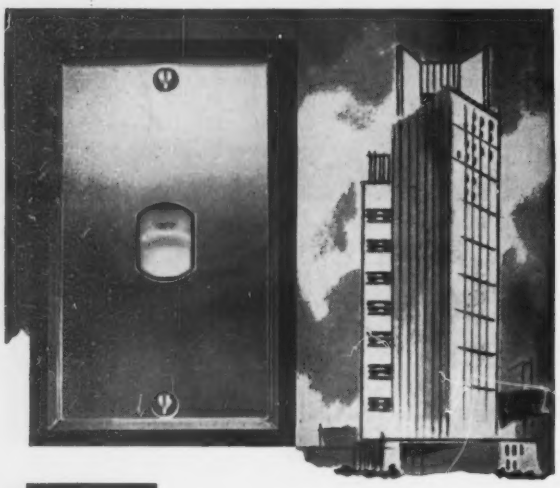

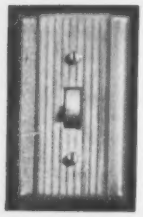

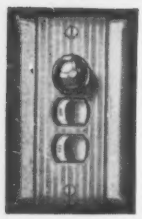

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G-P Extrawide Reversible Siding is another of the many ways Georgia-Pacific—the world's largest producer of top Redwood grades—gives you more opportunity to build better at less cost.

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G-P EXTRAWIDE REVERSIBLE SIDING

Produced to give you quality at low cost

G-P Extrawide supplies the superb qualities of high grade Redwood exterior siding—resistance to rot, insects, fire; high insulation value; outstanding ability to take and hold paint and stain—yet it saves up to $37 per M feet in material costs over any comparable grade Redwood siding. And for economy of installation, G-P makes it in labor-saving widths from 10″ to full 24″.

To produce Extrawide, G-P selects small, top-grade Redwood pieces and electronically glues them into large panels with a permanent, exterior glue. One side is then smooth-surfaced, the other is textured coarse-sanded. Available in $\frac{3}{4}$″ thickness, in Clear, All-Heart or A-Grade, vertical grain. Matching battens, 3″ wide.

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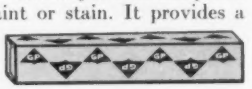
G-P factory-sealing costs a bit more to buy, saves a *lot* more on the job! G-P sealing is actually a colorless prime coat suitable for use with paint or stain. It provides a superior adherent base that allows paint and stain to flow on faster, go farther, cover better and last longer. Thus it offers long-range economy as well as immediate savings.



G-P immersion sealing gives Redwood an all-surface coat that brings out natural tones and grain patterns; protects from water stain, soil, marring and superficial black stain; inhibits mold and prevents moisture absorption from the back. Delivered in plasticized, moisture- and dust-proof packages.

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Factory-packaged to prevent damage loss

The handsome shadings and attractive grain patterns typical of Redwood are even more beautiful in Georgia-Pacific Redwood Paneling. G-P controls its own vast forests, cuts trees in Humboldt County, California, where soil and climate give the wood exceptionally warm, rich, red tones, make it the most prized of the nation's Redwood.

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New way to even more durable beauty

Superior in both appearance and durability to any Redwood finish previously known—G-P Redwood Finish! It locks in and heightens Redwood's unique color tones without obscuring wood grain and texture. It protects against mold, mildew, fungus. It contains a barrier against ultra-violet rays for resistance to discoloration of the wood after prolonged exposure to sunlight. And this finish, for exteriors and interiors, flows on smoothly, easily, may be applied to create varying degrees of gloss.

Another of G-P's better products, processes and packaging designed to build your business, cut your costs, increase your profits!

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STRUCTURE FEATURES USES OF LAMINATED PINE

CROSSETT, ARK. A large lumber-storage warehouse under construction here is of interest to architects because of unusual uses made of glued, laminated Arkansas Soft Pine for its columns and trusses.

The 42 columns, serving as vertical supports, taper from 9″ x 30″ at the base to 9″ x 48″ at a cutback near the roof, above which they taper back to the 30″ measurement. The tapered columns were designed to provide strength to carry the roof and the lumber-moving crane. They also create an interesting interior appearance. The cutback serves as a base for the crane beam and rails.

Span of the 104-ft-wide building at roof level is provided by 21 curved top-chord bowstring trusses. Trusses and columns, both fabricated by Unit Structures, Inc., are connected with pin connections and knee-braced to resist wind stress. No guy wires were necessary during erection of columns, since steel for moment connections was fixed to each column before it was lifted into position by a crane. Architectural applications include most wide-span structures. Southern Pine Association.

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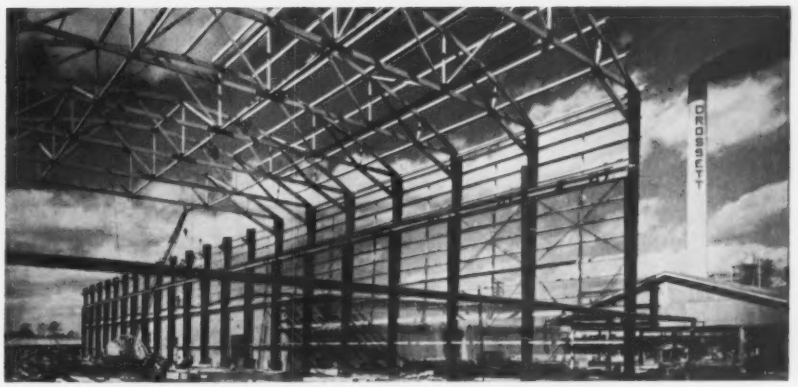
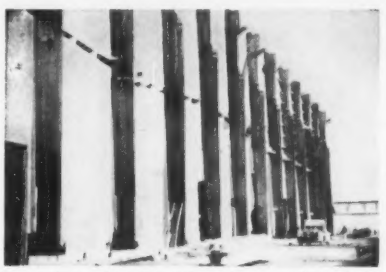


Building in unenclosed state shows dramatic structural system.



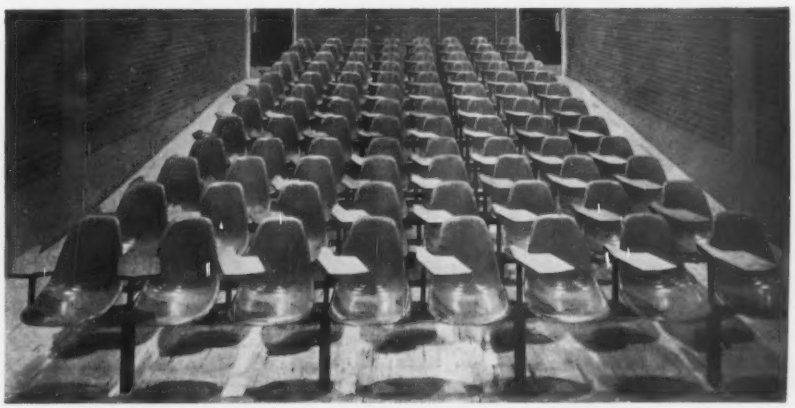
Tapering, laminated columns in place to receive roof trusses.

Roof trusses rest on cut-back at top of columns, have pin connections.

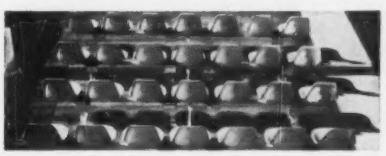
Fixed Multiple Seating Is Flexible, Attractive

After two years of testing in its own research center and in the field, Herman Miller Furniture Company has released its Charles Eames-designed multiple seating units. The seating, suitable for use in auditoriums, theaters, field houses, churches, classrooms—practically anywhere there is a need for fixed multiple seating—consists of a plastic chair shell with shock mounts and a new cast aluminum spider (connection between shell and base). Architects have flexibility in design of base structure and arrangement of seating, since the customer supplies his own bases and mounts the chair shells thereon. Bases should always include a square-steel support tube running parallel to the floor; the spider is bolted to this tube. Spider is designed to attach to a tube 1½″ x 1½″ minimum with 20″ o.c. for plastic side chair and 25″ o.c. for plastic arm chair. All standard plastic chair upholstery pads are available. Side chair measures 18″ high by 18½″ wide by 21″ deep; arm chair is 18″ high by 24⅞″ wide by 24″ deep. Eames Multiple Seating is also available on a movable base. Here, by varying length of tube, many arrangements of side chairs, arm chair and table are possible. Herman Miller Furniture Company.

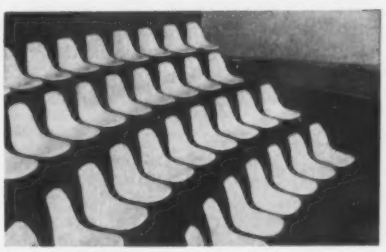
On Free Data Card, Circle **101**



Seating has "floating" quality; use of different colors add to drama.



Church application indicates use of seating for many types of enclosures.



Eames Multiple Seating in auditorium shows flexibility of use.

School Walls Are Modular

Flexible classroom walls which may easily be rearranged are possible with "Moduwall" equipment. Various components—tackboard, pegboard, chalkboard, cabinets, open shelves, easel board, utility rail, and flannel board—are based on a 4-ft module and may be interchanged. Components simply hook into wall-hung standards 6-ft long and may be placed at any desired height. The Brunswick-Balke-Collender Company

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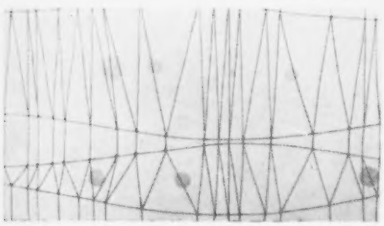
Drapery Is Flameproof

Perforated, finely-combed cotton fabric with an impregnated aluminum backing is used for a drapery fabric which gives muted light transmission, aids in sound absorption, and is said to have excellent insulating proper-



ties. The flameproofed fabrics are available in various designs and colors; the solid aluminum background is available in white, pastel, or deep colors—permitting uniformity or variety of window treatment from outside. Laverne, Inc.

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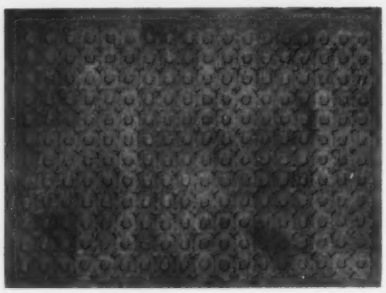
Textured Rugs Available

A richly-textured all-wool area rug, "Persian Garden," was designed by Al Herbert with filigree circles in a subtle blue and green combination



raised against a soft olive green background. Retail price is approximately $300 for the 4½′x6½′ size, though rugs in any size or color may be custom-made. V'Soske.

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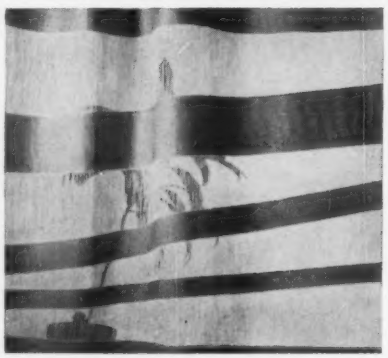
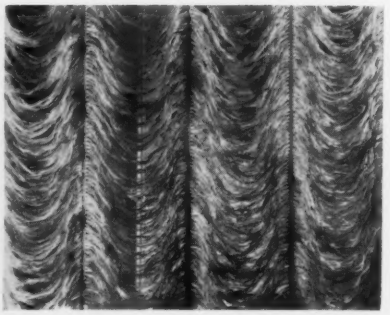


Brasilia Is Inspiration For Fabrics

Two of the most unusual fabrics of the Brasil Collection are shown. The Bahia blind is of heavy linen yarn held in suspension for a shirred effect. Diagonal Stripe Weave casement fabric is handwoven with a white linen warp and sand-colored mercerized cotton weft which slants across the warp at different levels in varying widths; 60″-wide, the fabric retails for approximately $15 per yard. Also



of interest to architects is Thatch Rows, a diagonal-patterned vertical-striped vinyl in beige, yellow, red, and blue colorways; 47½″-wide, washable, and fire-retardant, this will retail for approximately $11 per yard. Jack Lenor Larsen, Inc.

On Free Data Card, Circle **105**

Hard Finish for Aluminum Produced by New Method

A new process to hard-coat aluminum, which is up to 50 times faster than conventional methods, has been announced. Advantages of this process for making a tough finish are expected to lead to greatly-expanded use in many products, notably in architectural components. Hard-aluminum anodizing differs from ordinary aluminum anodizing (used largely for decorative and corrosion-resistance purposes) in that it produces a dense, tough film of aluminum oxide whose ability to withstand abrasion exceeds that of hardened steel. Advantage of the new process, in addition to time, is the light, silvery color of the finish, which is more readily adaptable to dyes than are the films. Toro Manufacturing Corporation.

On Free Data Card, Circle **106**

Vinyl-on-Cork Surfacing Heals Its Own Punctures

An ideal display surface is offered by new vinyl-on-cork wall covering that heals itself even after repeated punctures. The material consists of heavy-gage vinyl permanently bonded to ¼″ cork; it is available in rolls 4′ wide or in sections up to 12′ long. Installation requires only an application of mastic adhesive and pressure placement of the material. In addition to its damage-resisting surface, appearance is enhanced by the linen finish of the vinyl, produced in many decorator colors. Bond Crown & Cork Division, Continental Can Company, Inc.

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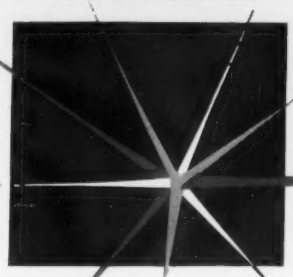
Continued on page 106



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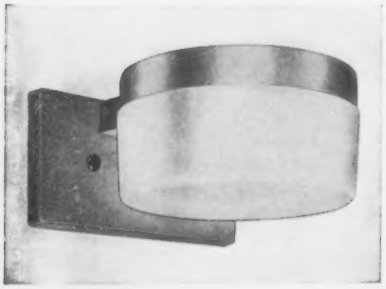


Wall-Bracket Fixture For Halls and Overhangs

New diecast-aluminum wall bracket is especially designed for hallways, overhangs, soffits, and porches. Fixture is made with a hand-blown "Thermopal" enclosure; the globe construction insures uniform light diffusion. A variety of finishes is available — satin chrome, and oyster, brown, green black, or synthetic-brass baked enamel —and convenience outlets are offered as an accessory. Over-all dimensions are 9¾″ x 4½″. Prescolite Manufacturing Corporation.

On Free Data Card, Circle **108**

Convex-Shape Door Provides Economies

A radical departure in door design, called Weldwood "Mono-Fin," consists of two 3/16″ hardwood-plywood skins, which are bonded at their outside long edges, and upon insertion of 8′-long parting member, form a gently convex shape. Completely prefinished, the door is shipped to the job site flat. (Multiple units are 4′ x 8′ panels which are glue-stitched from top to bottom at various modular widths, enabling a variety of door sizes to be cut from this panel.) Mono-Fin presents a thin ⅜″-edge profile on the adjacent wall surface; its 8′ height blends with matching Weldwood wall paneling, and the stressed-skin principle produces a perfectly balanced door with remarkable freedom from warping. Suggested uses are as economy doors for closets and cabinets. United States Plywood Corporation.

On Free Data Card, Circle **109**

Process Developed for "Instant" Concrete Pipe

Recently-developed construction machinery can build "instant" concrete pipe in a freshly-cut ditch at a rate of 8 to 12 ft/min. Using two 300-ft inflated rubber and fabric forms, with only 3 psi air pressure, as much as 600 ft of pipe can be poured without interruption. Ready-mix concrete trucks are used in a continuous stream to service the pouring equipment. Currently being used to build irrigation pipe, the process can be adapted to build storm and sanitary sewers. Fullerform Continuous Pipe Corporation.

On Free Data Card, Circle **110**

Deeper Corrugations Improve Roofing Material

New roofing/siding material, known as "Deep Corrugated" stainless steel, is said to offer 50% cost savings and even greater weight reduction. The deep corrugations, having a 2⅔″ pitch and a ⅞″ depth, provide more than twice the strength as material of the same gage or weight. Cost savings result from designing for typical purlin spacing, while reducing the gage of stainless steel, or from maintaining the gage, while widening the distance between purlins. The new material is especially recommended for industrial buildings, warehouses, and other structures in areas where there are atmospheric corrosion problems. Armco Steel Corporation.

On Free Data Card, Circle **111**

Lighting System Has Amazing Brightness

Compact new lighting system has a brightness level 338% greater than any fluorescent unit commercially available. Its startling brightness gain to 22,000 ft lamberts compares with the 6500 level achieved only last year. The system combines a newly-developed aperture lamp and an optically-controlled fixture, to throw a narrow band of light for a considerable distance, with uniform distribution and minimum glare. The unit is expected to find many uses for fluorescent lighting in areas where it has previously not been feasible—in low-mounted highway lighting, bridge and tunnel lighting, building-façade floodlighting, and edge lighting for signs. Sylvania Electric Products, Inc.

On Free Data Card, Circle **112**

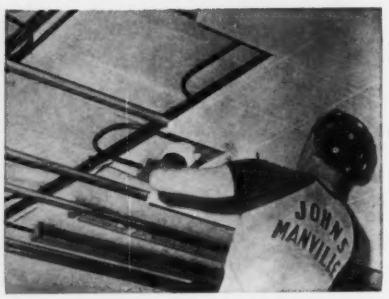
Paging Done Selectively By Portable Receivers

Pocket-sized "Electropage" permits confidential communication to personnel, without wires, buzzers, or public-address systems. The miniature receiver carried by key individuals weighs only 8 oz and is fully transistorized to last over 90,000 hrs; shock-absorbing rubber cushions the case against jarring. Calls may be made selectively to any person; emergency calls are instantly made to all receivers. System is ideal for hospitals, plants, and such institutions as governmental buildings and houses of detention. United States Communications, Inc.

On Free Data Card, Circle **113**

Radiant-Heating Ceiling Absorbs 90% of Sound

A new "Sanacoustic HCS System" for radiant heating, cooling, and sound conditioning provides many advantages—no-draft heating and cooling, absorption of 90% of the sound that strikes it, and unencumbered floor



area. Basic components are water-carrying coils, sound-absorbing insulating blanket, and perforated metal panels that form the finished ceiling. Installation is under full responsibility of the manufacturer. Maintenance is simplified because metal panels can be readily unsnapped to give complete access to any part of the system. Controls may be of the zone or individual room type. Johns-Manville Corporation.

On Free Data Card, Circle **114**

Roof-Deck Additive Ends Capillary Action

After three years of intensive research, a silicone additive now makes wood fibers of Tectum Roof Deck water repellent. "Fiberguard" virtually eliminates capillary action, since the specially-formulated additive is not compatible with water. The new development protects the roof deck material during storage and construction; protection is also afforded during the life of the building, since

Continued on page 108

new elegance in suspended luminous overhead elements...**INFINILITE**

Here is the first suspended ceiling of true architectural simplicity in a new infinite dimension...a luminous grillework of dignity for important interiors. Introduces a concealed suspension system and circular louver design that creates an atmosphere of dramatic elegance and prestige. ■ Unique INFINILITE joint eliminates seams, laps and cumbersome "T" bars. Plastic grilles are connected by nylon clamps to form a single, uniform panel, regardless of ceiling contour. Easily removable for cleaning, maintenance and shifting of elements. Now available in a range of metallic and color finishes. ■ Use your professional letterhead to request full data and samples of this new dimension in suspended luminous ceiling design.

INFINILITE REGISTERED TRADEMARK - PATENT APPLIED FOR

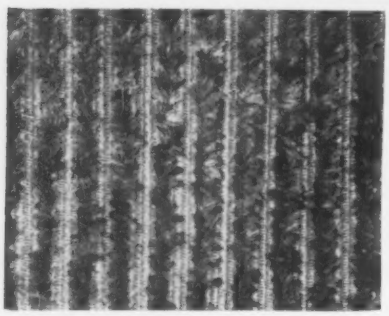
a product of Integrated Ceilings & Grilleworks, Inc. ■ 11766 W. Pico Blvd., Los Angeles 64, Calif.

Continued from page 106
water from leaks in roofing over the deck will pass directly through the material, making damage easy to locate and repair. Tectum Corporation.
On Free Data Card, Circle **115**

Chair Folds to 6" Width

Compact folding chair has laminated-walnut seat and back, chrome-plated steel frame, adjustable back swivel for

posture comfort. Designed by George Mulhauser, chair retails for $14.50 or $50.00 for sets of four. B. G. Mesberg National Sales, Inc.
On Free Data Card, Circle **116**



Unusual Rugs Available

Heavily-tufted sisal rugs were designed by Jack Lenor Larsen and Ruben Eshkanian and are handwoven in Taiwan. Available in 6 colors, natural, red-orange, turquoise, bronze, blue green, and ochre green, the rugs measure 3′x5′, 4½′x7½′, and 6′x9′, retailing for about $18, $33, and $45. Also available are handsome wall coverings, linen backed with paper and printed vinyls. Karl Mann Associates.
On Free Data Card, Circle **117**

Side Chair Stacks

New plastic-shell side chair with a molded foam-rubber cushion has an unusual center vent which allows stacking up to six chairs. Designed by Richard Schultz, the chair is available with plastic shell finished in white, gray, or charcoal; or with the shell fully upholstered. The base is cast aluminum, with polished chrome finish or with fused plastic finish to match shell. Retail: $84. Knoll Associates, Inc.

On Free Data Card, Circle **118**

New Angle On Sinks

Stainless-steel, mirror-finish sink occupies corner of kitchen work counter, as two compartments are at right angles to one another. Design saves counter-top space in small kitchens and minimizes dishwashing movements for housewife. Jensen-Thorsen.
On Free Data Card, Circle **119**

Remote-Control Room Air Conditioner Introduced

Compact remote-control panel for room air conditioners permits management of cooling and heating without going near unit (permitting greater flexibility in placement of units). Control, expected to be particularly useful for invalids, hospital rooms, and offices, contains the thermostat, allowing control of temperature from location of user rather than at conditioning unit. Knobs across lower half of panel activate either cooling or heating. Switches at upper right exhaust stale air and adjust air direction and circulation. Center and right switches

operate louvers on cooler to control horizontal and vertical air movement. Whirlpool Corporation.
On Free Data Card, Circle **120**

Come On Down, Girls, the Night's Young

These girls are not escaping from their mean house mother for a gambol on the green; they are demonstrating the new "Speed-Scape" fire safety ladder. Made of aluminum, the ladder was recently approved by the Philadelphia Fire Department. Folded to the size of a rain spout when not in use, it can be opened by pulling a trigger latch at the second or third floor levels (ladder currently comes in two- and three-story heights). Speed-Scape is covered nationally by product liability insurance, and has been tested and certified to support nearly three tons (no offense, girls!). B & R Ladder Enterprises, Inc.
On Free Data Card, Circle **121**

Tile Does a Double Face

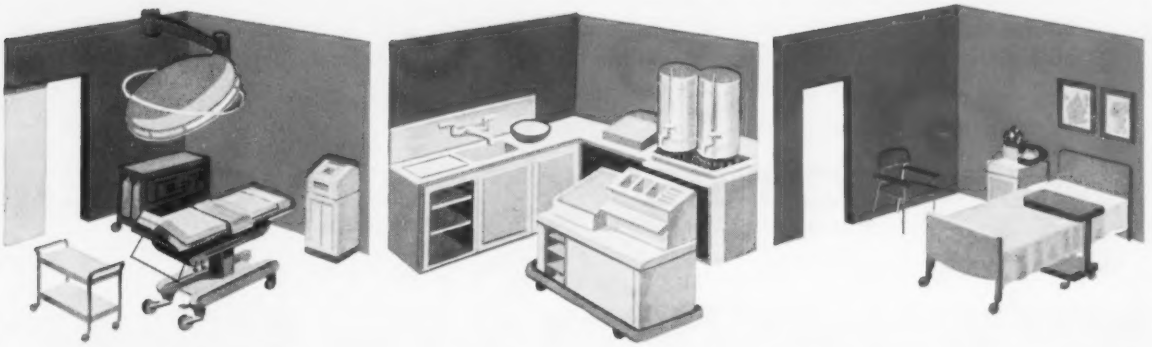
Ceramic building tile, having glazed finish on one side, and "rugg-tex" surface on other, gives flexibility of design since tile can be reversed on interior and exterior walls to meet requirements of color and texture. It conforms to requirements of ASTM and Federal specifications for load-bearing structural clay tile. High compressive strength and load-bearing

Continued on page 113

Permanently

GERM-PROOFED

vinyl wall covering



Modern-Cote "33c"

● Bacteria and fungus *can't* grow on Modern-Cote "33c" vinyl wall covering.

Corobex® impregnation permanently guarantees it. Laboratory tests prove it.*

And Modern-Cote presents such a tough surface . . . an "armor" of clear vinyl . . . that it needs no maintenance beyond an occasional washing.

Any color or pattern you choose from the unlimited Modern-Cote selection of fabric-backed vinyls will stay bright and new for a lifetime.

Modern-Cote has earned a Class A fire rating (OBC, Section 1203.34) based on a flame spread rating of only 10 in tunnel tests.

*Write for details now . . . laboratory confirmation on Modern-Cote bacteriostatic and fungistatic action . . . a Modern-Cote catalog . . . and the name of your nearest Modern-Cote dealer.

NEW CASTLE PRODUCTS, INC. • *New Castle, Indiana*
Canada: New Castle Products Canada, Ltd., St. Lambert, Que.

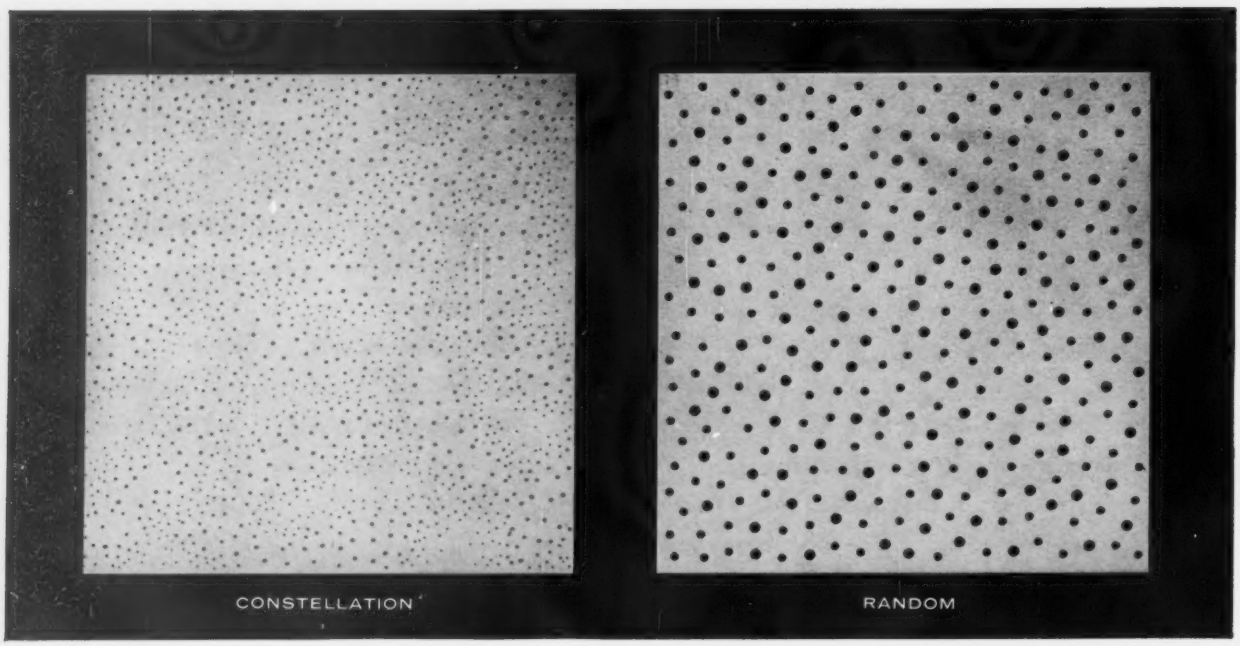
Modern-Cote *by* **modernfold**®

ENDURING BEAUTY...YOURS

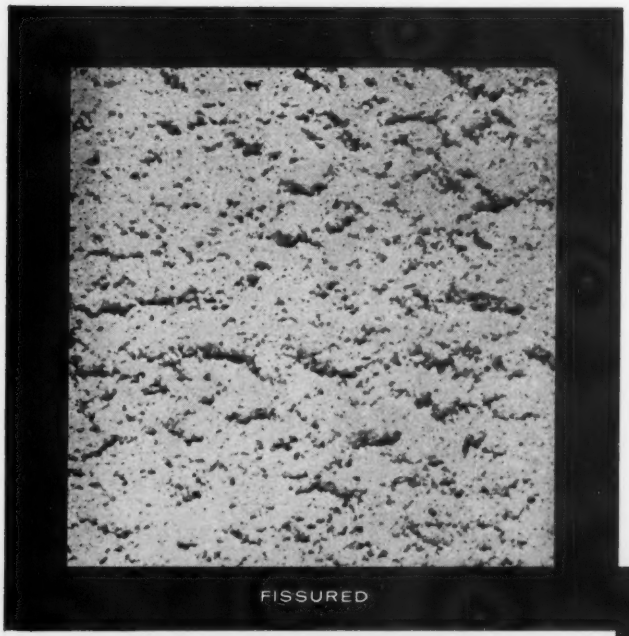
Lo-Tone mineral tile has deep, deep beauty that makes clients proud of your selection. And Lo-Tone acoustical tile ceilings, like the Egyptian art shown here, have that *extra* measure of quality so their beauty will endure in spite of passing years. It's a deep, deep quality that resists sagging and chipping —plus a double-coated finish that keeps ceilings bright, with just the right amount of light reflection. Lo-Tone mineral tile is made by experienced craftsmen utilizing a manufacturing process which insures the highest quality control. This means holes always cleanly drilled . . . fissures uniform . . . edges smooth and clean . . . corners square and true . . . kerfs accurately placed. Lo-Tone is made in 12″ x 12″ tiles illustrated and in 24″ x 24″ and 24″ x 48″ Constellation pattern ceiling board for drop-in application. This same attention to detail is also yours in economical Nu-Wood cellulose fiber acoustical tiles. See Sweet's Architectural File (11a-Wor) for noise reduction coefficients and short-form specifications. For more AIA file folders and samples of Nu-Wood and Lo-Tone acoustical tiles, write to Wood Conversion Company, First National Bank Bldg., Saint Paul 1, Minn.

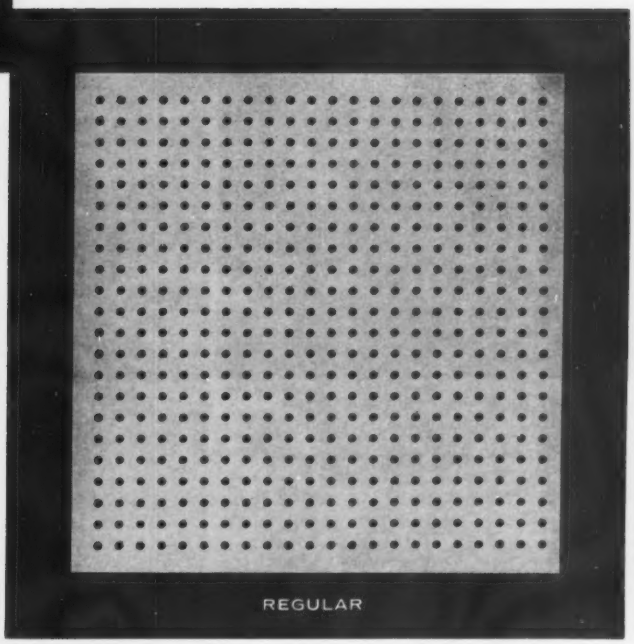
For enduring beauty, specify . . .

LO-TONE® MINERAL TILE / NU-WOOD® CELLULOSE FIBER TILE



WITH LO-TONE® MINERAL TILE



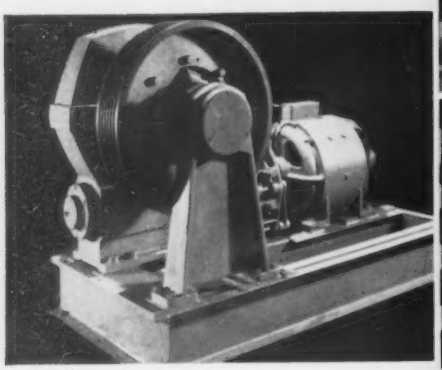


"The Goddess Maat," Egyptian art on stone. Its simple beauty has endured for over 3,000 years.

For more information, turn to Reader Service card, circle No. 317

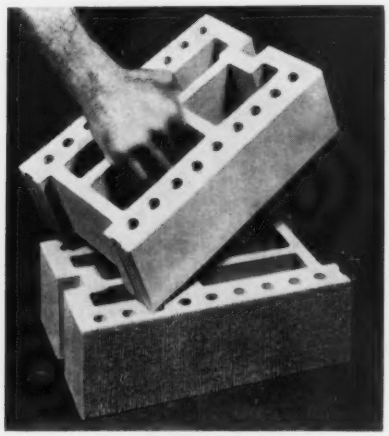
Attention to detail

Over-all excellence of any product . . . a building or a machine . . . depends on conception and construction of the component parts. In the vertical transportation field, Shepard Elevator Company has a 100-year history of patient attention to the myriad details involved in the design of a modern hoisting machine like the one shown below. Shepard manufactures its own motors, gears, housings, controls . . . and thus achieves a high level of operating performance and dependability. Shepard geared and high-speed gearless elevators are now available throughout the United States and Canada. See our catalog in Sweet's Files or write Shepard Elevator Company, Division of Dover Corporation, 5051 Brotherton Road, Cincinnati 9, Ohio.



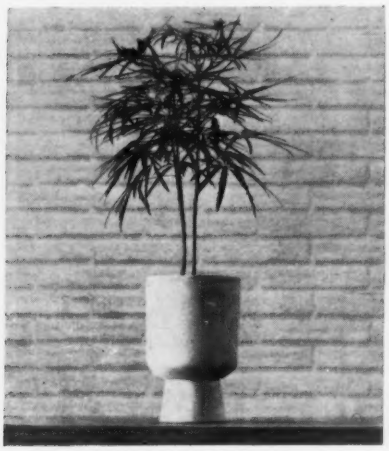
SHEPARD ELEVATORS

For more information, circle No. 318



qualities of tile eliminate need for roof-supporting columns or pilasters in low-rise buildings. Relatively low thermal and moisture volume-change characteristics obviate need for expansion joints. Natco Corporation.

On Free Data Card, Circle **122**



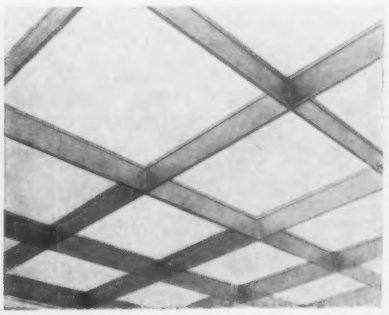
New Shapes Introduced for Architectural Pottery

New lines of pottery planters and ash receptacles have won design awards, includes this goblet-shaped planter. Available in black or white glazed-mat, or unglazed off-white, planter may be had in three sizes: 10-in. diameter by 15-in. high; 14½-in. diameter by 20-in. high; and 15½-in. diameter by 24-in. high. Stoneware base permits use directly on indoor floor surfaces. Architectural Pottery.

On Free Data Card, Circle **123**

For Functions Performed By Ceiling System

"Sigma III," latest version of original "Sigma" multifunction ceiling



system, combines lighting with noise absorption, air diffusion, and at the same time provides a grid for support of new thin-wall movable partitions. Access to the grid (which supports the vertical posts of the movable walls) is at the intersection of the acoustical baffles. High levels of illumination are comfortably maintained by utilizing the louvering effect of the acoustical baffles and by the angled shielding of the steel-framed louvers. Air diffusion is through fine-textured louvers in the element itself. The Wakefield Company.

On Free Data Card, Circle **124**

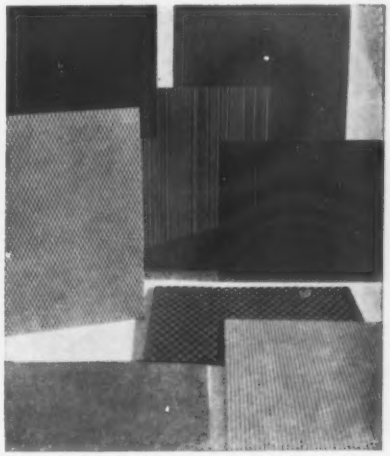
Fluorescent, Incandescent Are Combined

Fixture that combines indirect fluorescent and controlled incandescent lighting in single unit provides best features of both types of lighting. Up-lighting is furnished by fluorescent tube and down-lighting by incandescent globes. Both light sources are controlled separately, making it possible for either or both to function at any time. Unit, 4′ in length, is especially intended for institutional use—in hospitals, hotels, and motels. Prescolite Manufacturing Corporation.

On Free Data Card, Circle **125**

Vinyl-Sprayed Metals Have Architectural Future

Introduction of new system for spray-application of decorative vinyl finishes to steel and aluminum has implications in field of architectural design. Technique makes possible the application of vinyl dispersion coatings to plain or textured metal *after* it has been fabricated, as compared to other systems which start with pre-laminated or pre-coated metal sheet. This is said to result in notable cost reduction. Selection may be made by customer from the wide variety of pretextured metal available from steel and aluminum fabricators; finish can be applied in fabricator's own factory,



using standard spray equipment or electrostatic spray. Finish can be sprayed on complex shapes as well as flat surfaces. Possibilities obvious in architectural field are custom-coatings for curtain-wall spandrels and mullions, and interior wall and ceiling applications. Metal & Thermit Corporation.

On Free Data Card, Circle **126**

Transit Operates Under Adverse Conditions

Low-priced optical plummet transit eliminates dependence on plumb bob when setting up in wind, gives greater accuracy than plumb-bob transits. Optical plummet rotates with transit, making it possible to cross-check on point; it focuses for short set-ups or deep sights. Shifting head tripod has twice the usual shifting distance. Tripod screw threads are standard and a locking device on the leveling head can be temporarily lifted to permit standard shifting when instrument is used on any other standard tripod. Telescope has reversion bubble, side focusing, and a gun sight. Fennel Instrument Corporation of America.

On Free Data Card, Circle **127**

PYREX® LIFETIME DRAINLINE GUARANTEED AGAINST CORROSION AND LEAKAGE

Now you can install laboratory drainline that is guaranteed against corrosion and leakage for the life of the building in which it is installed.

We mean what we say. The only exception is the understandable one of corrosion from massive volumes of hydrofluoric acid or hot alkalies.

The guarantee covers all other acids and alkalies, singly or in combination.

SEND FOR NEW BULLETIN. Covers guarantee in detail. Also shows and explains new one-nut joint shown above and how it makes PYREX drainline the least expensive you can install. Write for PE-30 to Plant Equipment Department, 20 Crystal Street, Corning, N. Y.

CORNING GLASS WORKS

CORNING MEANS RESEARCH IN GLASS

For more information, turn to Reader Service card, circle No. 319

AIR/TEMPERATURE

Spiral Pipe Has Unusual Rigidity

"Lockseam" spiral pipe is designed especially for high-velocity air systems and is ideal for underground, concrete-encased heating ducts. Extreme rigidity permits installation of great lengths with fewer joints. Lighter gages are also permitted, since four thicknesses of metal in the helical seam provide continuous reinforcement for the entire length of pipe. Matched, engineered fittings eliminate on-the-job fabrication. Brochure, 8 pages, gives properties, specifications, and diagrams of fittings and accessories. Spiral Pipe Division, United Sheet Metal Company, Inc.

On Free Data Card, Circle **200**

Power-Exhauster Curb Cuts Noise Effectively

Designed to replace conventional power-exhauster curbs is a new prefabricated, self-flashing unit, "QT Sound Control Curb." It reduces an exhauster's sound power at inlet by 90%, yet reduces air-moving efficiency only 10%. Curb is thermally insulated to prevent condensation, and, as an added advantage, is only 6″ to 12″ in over-all installed height. Four-page *Bulletin 60 SC* includes performance graphs, mounting drawings, and dimensional data for eight models of the new curb. Jenn-Air Products Company, Inc.

On Free Data Card, Circle **201**

CONSTRUCTION

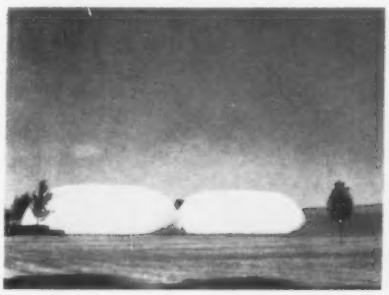
Stadium Case Histories Show Role of Pozzolith

Case histories of concreting problems, encountered and successfully solved in stadium and auditorium construction, are reported in new 20-page booklet. Construction reports and photos of 16 outstanding projects, here and abroad, cite the role played by "Pozzolith" in obtaining desired workability and durability of concrete. A brief summary of Pozzolith's general advantages is included. The Master Builders Company.

On Free Data Card, Circle **202**

Inflated Nylon Structure Protects in Zero Weather

Four-page picture story of a construction deadline being met despite −3 F weather conditions shows one use of new "Air Structure." It is an all-weather, vinyl-coated nylon structure, flexible at all temperatures; it can be set up in one hour and kept inflated by low-pressure air from a small

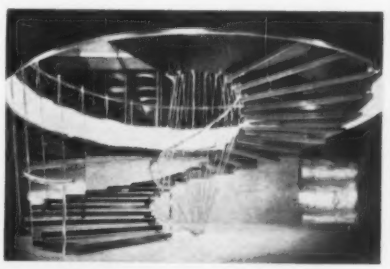


economical blower. Fabric is translucent (can be floodlighted from the outside) and is flame resistant. Sizes range from 20′ x 30′ x 10′ high to 60′ x 120′ x 30′ high, suggesting many uses in addition to protection of workers or construction—shelter of equipment, storage of building materials, and warehousing. Hoosier Tarpaulin & Canvas Goods Company, Inc.

On Free Data Card, Circle **203**

Extensive Data on Stainless Steels

New 28-page manual, *Armco Stainless Steels for Architecture,* offers a broad coverage of its subject. Subtitled "A Guide for Design and Specification,"



the book includes extensive information on the fundamentals and types of stainless steel, and on the selection of optimum form, size, and thickness. Finishes and fabrication are discussed. A guide for specifying stainless steel and a glossary of terminology will also be valuable to the architect. The manual is enlivened by pictures of notable buildings and products that have used stainless steel. Armco Steel Corporation.

On Free Data Card, Circle **204**

Comprehensive Source On Masonry Anchoring

Pocket-sized 48-page *Masonry Anchoring Handbook* gives all necessary information for any application of drilling in, and anchoring to, masonry. Each device is precisely described as to characteristics and use; a full-page summary chart lists the devices typically used for fastening numerous building components and accessories. The Rawlplug Company, Inc.

On Free Data Card, Circle **205**

Hyperbolic-Paraboloids Of Lumber Are Analyzed

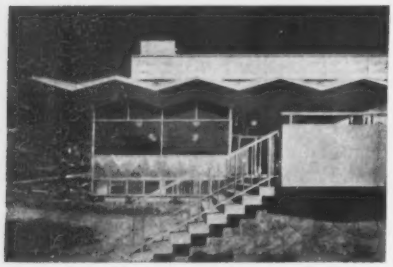
In response to many inquiries, *Simple Hyperbolic Paraboloid Shells of West Coast Lumber* has been published. It gives construction photographs of the now-famous Forest Products Pavilion designed by John Storrs for the Oregon Centennial in 1959, and explains general construction procedures recommended by the structural engineer, James G. Pierson. (The building consists of seven separate paraboloids.) Latter sections of the 8-page booklet are devoted to technical analysis of a simple hyperbolic-paraboloid shell of West Coast lumber. Engineering drawings and formulas accompany the text. Purpose of the booklet is to emphasize the ease with which such a structure is designed and built. Its expressive beauty and high structural efficiency make this form appropriate for many building types. West Coast Lumbermen's Association.

On Free Data Card, Circle **206**

Continued on page 116

Uses and Properties Of Aluminum Described

Aluminum in Architecture describes how "aluminum achieves what the architect conceives." Opening with a description of available aluminum alloys, the 24-page booklet then discusses some design considerations and limitations. Typical applications are pointed out in alloy-selection guides;



property charts provide data on non-heat-treatable alloys, heat-treatable alloys, and casting alloys. Technical data is also given on extrusions, curtain walls, finishes, and specialty products. Suggested specifications will help in obtaining accurate bids from subcontractors. Kaiser Aluminum & Chemical Sales, Inc.

On Free Data Card, Circle **207**

Fireproofing Systems Of Perlite Are Detailed

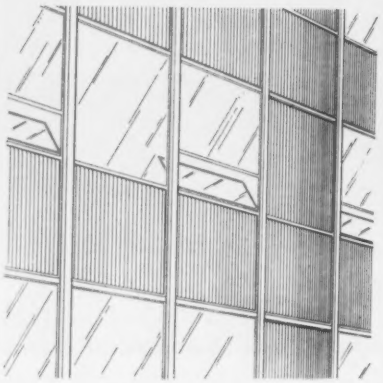
The eighth edition of *Lightweight Fireproofing with Perlite* has been published. This 8-page booklet describes in detail 41 approved, fire-rated construction systems that use perlite plaster and perlite concrete. These systems include up to 5-hr ratings for steel columns, walls, partitions, floors, and ceilings; and up to 4-hr ratings for direct-to-steel fireproofings with perlite acoustical plaster. A brief description of the advantages possible with these designs precedes the graphic material, and a list of noted buildings that have used perlite fireproofing is included. Perlite Institute, Inc.

On Free Data Card, Circle **208**

DOORS/WINDOWS

Curtain-Wall Catalog Shows Wall for Motels

New 24-page catalog on the *Lupton Curtain Wall* is now available. Twenty types of possible window arrangements are described, complete with data on materials, construction, and mullion properties. Photographs of



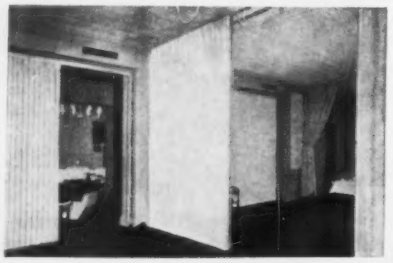
typical installations are in full color. The catalog also discusses the "Comfort-Conditioning" curtain wall, in which the walls include built-in heating/cooling/ventilating units. Special attention is given to the use of this system in motels, where it becomes the entire front wall of a motel unit. Michael Flynn Manufacturing Company.

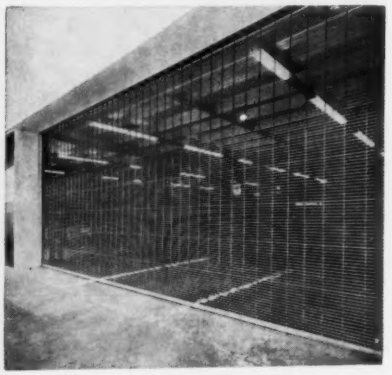
On Free Data Card, Circle **209**

Four New Folding Doors Introduced in Catalog

Catalog, 16 pages, carries full information on four new folding doors, giving descriptions, detail drawings and specifications. Products covered are "Customfold" doors, built to architect's specification, for commercial application; "Stackdoor," an equally-sturdy residential version of Customfold; "Accordofold Royale," a hard-core folding door covered in supporting vinyl, for residential use; and "Wovynfold," a woven door of mahogany and nylon-fortified vinyl, also for residential use. American Accordion-Fold Doors, Inc.

On Free Data Card, Circle **210**





Rolling Grills Give Security and Ventilation

Clean-lined rolling grills, in steel or aluminum, are described in new 4-page *Bulletin 6004*. Principal applications of these grills are for garages, school corridors, industrial plants, etc., where a practical rolling closure is required combining strength, security against entry, full visibility, and free ventilation. Complete specifications are included, with detail drawings that cover all types of standard and special situations. The Cookson Company.

On Free Data Card, Circle **211**

New Weathertightness for Aluminum Sliding Doors

Aluminum, sliding, glass doors, with increased weathertightness made possible by a new design concept, are illustrated in 12-page 1960 catalog. The sliding panel of the door is now placed on the exterior; tests show less infiltration both of water and air. With the screen, therefore, placed on the inside, it has greater protection against dirt and moisture. Three lines of doors are included in this catalog,

Continued on page 120

The main corridor of a Fred Harvey Oasis Restaurant on Tri-State tollway near Chicago, illustrating a dramatic ceiling treatment possible with Steeldome construction. The exposed concrete waffle ribs are painted charcoal gray, sounding a new note in decor motif.

Architect & Engineer:
Pace Associates.
General Contractor:
Ragnar Benson, Inc.

A NEW WORLD OF DECOR OPPORTUNITY IN CONCRETE JOIST CONSTRUCTION

Ceco Steeldomes Make Possible Unusual Ceiling Treatments . . . Provide Wide Open Spaces

In many an architect's office, you'll hear talk about the exciting new effects in ceiling ornamentation now possible with Ceco Steeldomes. Not only are architects talking . . . they are *using* Steeldomes to take advantage of this new world of decor in concrete joist construction. Reason: Steeldomes create smooth surfaces in the concrete ceiling, giving an unblemished, high quality finish, because they are removed by compressed air. The decorative treatment can be applied directly to the exposed waffle ceiling. Steeldomes offer other advantages, such as wide column spacings, the rigidity of monolithic concrete, and economy. Ceco Steel Products Corporation. Sales offices, warehouses and fabricating plants in principal cities. General offices: 5601 West 26th Street, Chicago 50, Illinois. Write for full particulars pertaining to Steeldome construction.

CECO STEEL

IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE

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BullDog's
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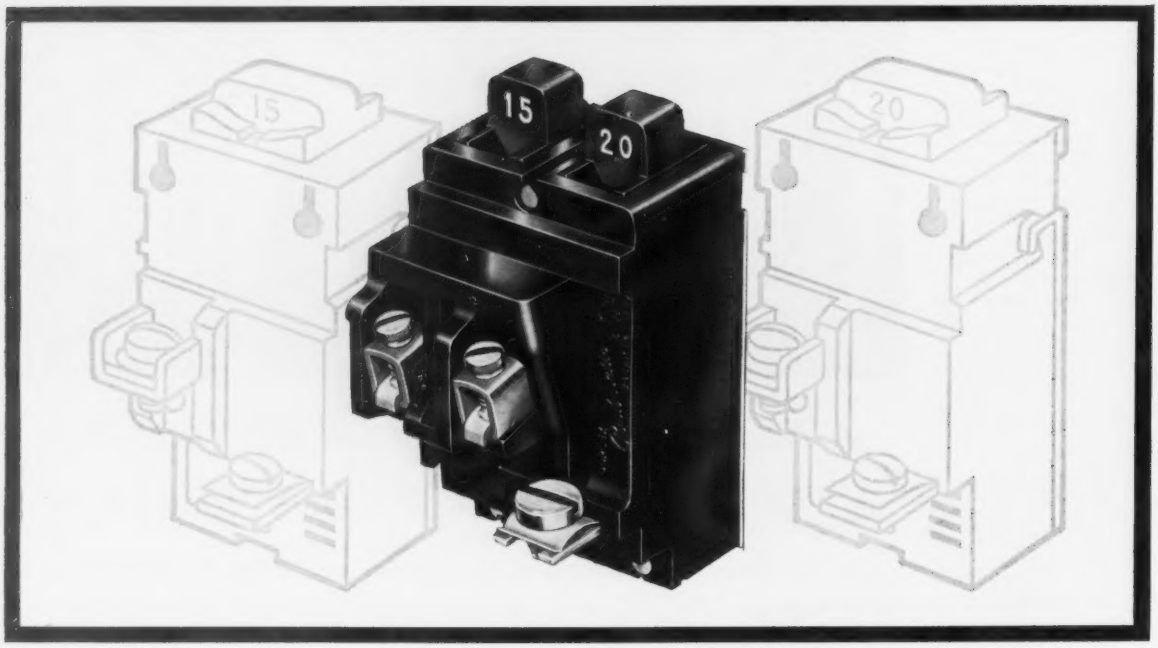
The only space-saving breaker



1. SPACESAVER. New Duplex Pushmatic® breaker puts two breakers in the space of one single breaker. You get more electrical circuit flexibility with smaller panels; and 15- and 20-amp capacity, in any combination.

2. DOUBLE PROTECTION. Duplex is the only 2-in-1 breaker that gives coil-magnetic short-circuit protection, as well as thermal overload protection, for each circuit. Provides identical, independent coil protection in each pole.

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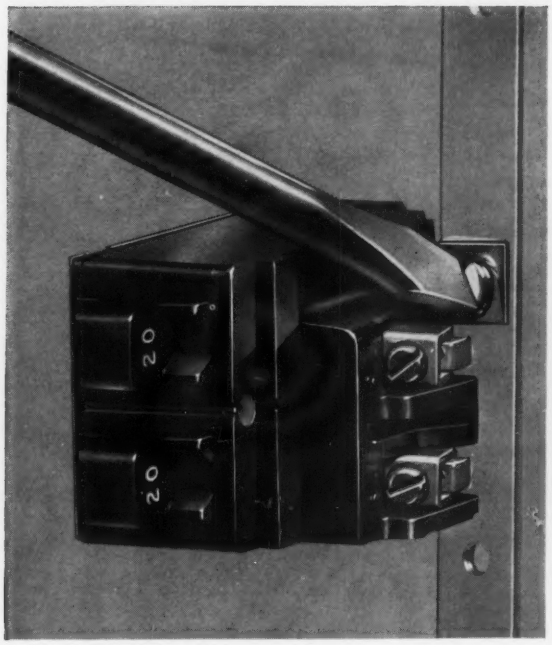
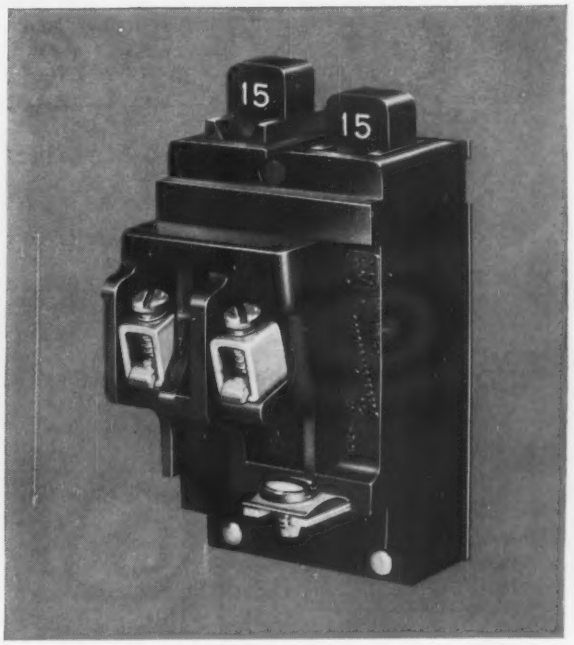


3. ONE BOLTED CONNECTION. Duplex provides a single positive bolted connection to bus bar. Electrical contact is under constant pressure, won't work loose, won't overheat. Installation is quick and easy.



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BULLDOG ELECTRIC PRODUCTS DIVISION
I-T-E CIRCUIT BREAKER COMPANY

For more information, turn to Reader Service card, circle No. 321

Continued from page 116
which has a double-page selection chart summarizing features and data about the doors. Arcadia Metal Products.

On Free Data Card, Circle **212**

A Specific Lock for Every Hospital Need

Hardware for Hospitals features a unique selector chart, listing every room in a complete hospital, and showing the distinctive lock appropriate for the area. The 12-page brochure also includes large-scale drawings of the locks, with clear description of their construction, operation, and design features. Schlage Lock Company.

On Free Data Card, Circle **213**

Remote Control of Inaccessible Windows

Complete line of remote window controls, to provide precise and convenient mechanical operation of inaccessible windows, is illustrated in 8-page bulletin. A selection guide to the five basic systems is provided, and charts detail the specifications for each type of system. Full data is given—on number of windows that can be operated, handle loads, maximum runs, and maximum window openings. A typical specification is included. Teleflex Inc.

On Free Data Card, Circle **214**

ELECTRICAL EQUIPMENT

Fixture for Patients Combines Four Functions

A decorative hospital-room wall bracket, combining all electrical functions in one compact unit, is described in 4-page brochure. Skillful control of the lighting elements delivers optimum illumination levels without annoying brightness; in addition to general room illumination, fixture provides reading light, convenience outlets, and night light. Sculptural design carries out trend to residential decor in patient rooms. Kurt Versen, Inc.

On Free Data Card, Circle **215**

Engineering Data for Multi-Outlet Baseboard

Engineering information on "Plugmold 2200," a multioutlet baseboard system, is contained in 4-page folder. Booklet describes the all-steel baseboard and contains technical information on devices and fittings, methods of fastening to various surfaces, and installation. The use of "Snapicoil," a coil of prewired receptacles ready to be snapped into the holecut raceway cover, eliminates multiple splices between short lengths. The Wiremold Company.

On Free Data Card, Circle **216**

Lighting Equipment For Sudden Power Failure

1960 catalog of *Emergency Lighting Equipment*, 8 pages, features models of the "Light Warden Chargomatic." These units contain no manually-operated switches or timers for fast charging. They are simply plugged into a standard electrical outlet; when lights go out, unit goes on instantly and automatically. Manufacturer will work with designer in recommending appropriate layouts or in planning special equipment. Electric Cord Company.

On Free Data Card, Circle **217**

FINISHERS/PROTECTORS

Epoxy Topping Has High Chemical Resistance

A new epoxy floor, with measurably greater chemical resistance than present floor formulations, is presented in 4-page folder. The topping, approximately $\frac{1}{8}$" to $2\frac{3}{16}$" thick, is applied to a prepared base slab, usually concrete. Since it cures quickly, it can be used to resurface worn industrial floors with speed. Brochure describes advantages of epoxy formulations and contains a summary of resistance tests. Suggestions for use, as well as limitations, are given. Kalman Floor Company.

On Free Data Card, Circle **218**

Paint Specifications For All Surfaces

Complete Painting Specifications, 12 pages, suggests appropriate "Luminall" paint for every surface. Full specifications for various surfaces are outlined; products are then each briefly described in a paragraph. An introductory index summarizes all data on single page, referring specifier to proper product and specification. National Chemical & Manufacturing Company.

On Free Data Card, Circle **219**

INSULATION

Mechanically-Applied Acoustical Treatment

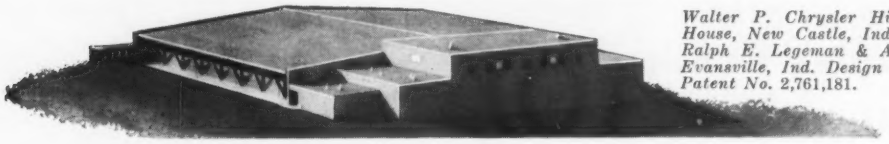
New 4-page technical bulletin on "Cafco Sound-Shield" describes mechanically-applied, high-sound-absorption acoustical treatment. Data includes fire hazard classification, light reflectivity, and test results on sound absorption. Product is suitable for office buildings, stores, restaurants, schools, and churches. Unlike preformed acoustical materials, Sound-Shield can be applied in varying thicknesses for desired sound reduction. Texture and color may be chosen to suit a particular job. Columbia Acoustics & Fireproofing Company.

On Free Data Card, Circle **220**

Sound-Absorption Values For Acoustical Products

Sound Absorption Coefficients of architectural acoustical materials is the latest bulletin, 44 pages, published by this association of producers. Up-to-date information on products is given first in summary tables, according to type of construction, then in producers' tables, according to particular brand name. A complete list of trade names is presented separately, for easy cross-reference. Installation recomendations are included. Write: Acoustical Materials Association, 335 East 45 St., New York 17, N. Y. ($.50).

Continued on page 122



Walter P. Chrysler High School Field House, New Castle, Indiana. Architects: Ralph E. Legeman & Associates, A.I.A., Evansville, Ind. Design covered by U.S. Patent No. 2,761,181.

THE NATION'S LARGEST HIGH SCHOOL FIELD HOUSE

CHOOSES **THE GYM FINISH THAT LEADING SCHOOL ARCHITECTS SPECIFY**

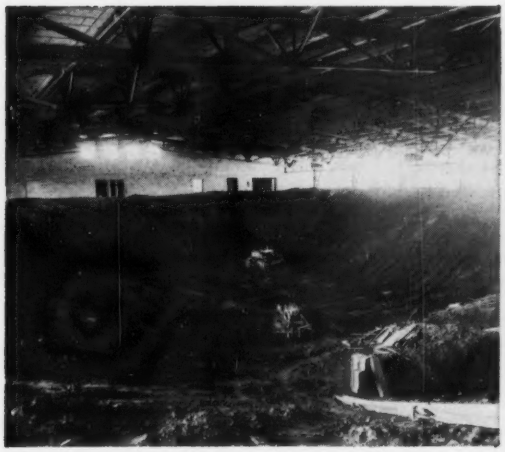
This outstanding athletic and community center was made possible by a Citizens Lay Advisory Committee, which sponsored the project and arranged the financing.

Consistent with the Committee's determination to have only the best, Hillyard TROPHY finish was chosen for the playing floor. This beautiful, no-glare and non-slip finish is the favorite of coaches, players, television producers and spectators, alike.

More than 15,000 of the country's top-rated field house and gymnasium floors–in universities, colleges, schools, clubs, Y's, industry, churches and hospitals–are Hillyard-finished. This includes all major Basketball tournament floors.

"classified as to slip resistance" Approved by MFMA

CHAMPION TROPHY GYM FINISH



As shown in the photos, this unique design provides for excavating and pouring the bleachers on the earth as framework. The roof is supported at grade line by trusses incorporating haunches for support as an integral unit, without need for supporting columns. Spectator entrances and exits are at grade level. Seating capacity, 9,252. Building contains 81,555 sq. ft., with a construction cost of $10.41 per sq. ft.

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Let the Hillyard "Maintaineer®" in your area give you an expert's advice on clean-up and initial treatment of any floors you specify. He'll gladly serve as your Job Captain,

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For the architect engaged in conventional and curtain wall design of offices, schools, hospitals and other high rise buildings, Fleetlite offers the only monumental double hung aluminum window that can be fully screened and still cleaned at floor level from inside the building.

SHORT SPECIFICATIONS

MATERIAL All frame and sash are extruded aluminum alloy 6063-T5 with a minimum tensile strength of 22,000 psi.

DESIGN FEATURES Upper and lower sash have extruded glass-frames hinged at the lower rail of each sash. For inside cleaning, glass-frames pivot "hopper style" when in the lower position. Jambs of adjoining windows fastened with male and female screws and splined for weather tightness. Continuous head and sill for mullioned units up to 20' wide.

HARDWARE Sash balanced with removable spiral type balances. Glass-frames lock into sash by concealed stainless steel cam locks. Installation anchors of heavy gauge steel cadmium plated.

WEATHERSTRIPPING Perimeter of sash double weatherstripped with wool pile. Glass-frames continuously weatherstripped to sash.

AIR INFILTRATION Shall not exceed .50 cubic feet per minute per foot of crack length under static air pressure equal to winds of 25 mph velocity.

GLAZING Glass and glazing up to and including ½" insulating glass under separate contract.

MAXIMUM SIZE 4'6" x 8'0" frame overall dimensions.

SCREENS Fiberglas half or full length screens available.

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SANITATION/PLUMBING

Rubber Pipe Absorbs Noise and Vibration

New "Vibraflex," a flexible wire-reinforced rubber pipe, eliminates up to 90% of the sound and vibration in a piping system. In addition to eliminating water-line noises and "water hammer" vibrations, it also compensates misalignments, and (with no metal-to-metal action) prevents electrolytic action. Data sheet, 2 pages, gives typical sizes, construction features, and applications. Mercer Rubber Company.

On Free Data Card, Circle **221**

Improved Shower Head Has New Control Features

New shower head, claiming numerous improvements in durability and in bathing satisfaction, is presented in 12-page brochure. Cone-within-cone spray of "Act-O-Matic" gives an evenly-distributed shower, with a water-conserving spray pattern no wider than tub width. New features make unit automatically self-cleaning, and eliminate clogging and dripping. Numerous models are suitable for residential and institutional use. Sloan Valve Company.

On Free Data Card, Circle **222**

Mushroom Sprays for Decorative Fountains

Data sheet, 2 pages, describes nozzles for spraying liquids into mushroom sprays of varying heights and angles. The nozzles are designed for use where medium-to-large capacities and coarse sprays are desired; many mushroom forms can be created by simple adjustments. Bulletin includes information on capacities, dimensions, construction materials, and design principles. Spray characteristics are illustrated. Schutte & Koerting Company.

On Free Data Card, Circle **223**

Plumbing Openings For Precast Decks

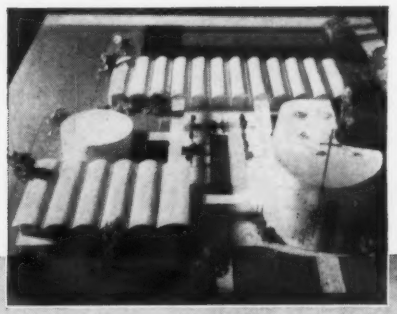
Plumbing for Flexcore Decks, 12 pages, explains in detail how openings can be designed into precast concrete decks and framed during construction, or hand-cut or drilled after deck is

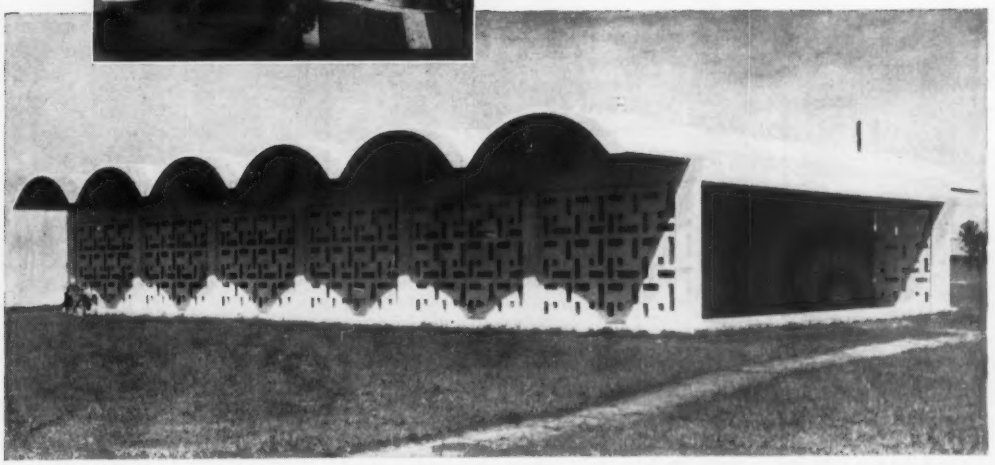
Continued on page 124

Modern Beauty...

in Old New Orleans

Prefab Concrete Combines Beauty, Safety and Economy





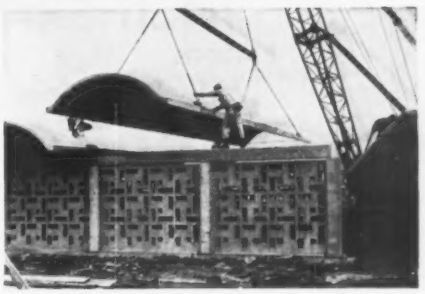
Above, newly completed church school. *Top,* model of entire project, shows first phase in left foreground, main sanctuary at right and other educational buildings at rear.

● Structural attractiveness and construction simplicity go hand-in-hand in this interesting precast concrete church school in New Orleans. Serving temporarily as both school and church, the building is part of a three-phase project that will include similar prefab concrete school buildings plus a unique cast-in-place concrete sanctuary.

Only 58 reinforced concrete sections (cast in five varieties) were used to assemble the barrel-vaulted, 65′8″ x 33′8″ building on its concrete slab. Including landscaping, the attractive, firesafe school cost only $28,920 prior to the installation of church furniture.

Vaulted roof sections, 44′ long, are carried by concrete beams resting on concrete columns. Perforated concrete panels with cathedral glass inserts form the side walls.

'Incor'® 24-hour cement was used exclusively by the precaster, enabling him to produce high quality concrete sections with maximum speed and economy—making the most efficient use of his facilities. Lone Star Portland Cement was used in the foundation and slab.



BETHANY METHODIST CHURCH
Pontchartrain Park, New Orleans, La.

Architect:
S. SHARPE STANFIELD & ASSOCIATES

General Contractor:
STERLING J. JOURDAN & SONS

Precast Units Fabricated and Erected by:
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ONE OF THE WORLD'S LEADING CEMENT PRODUCERS. OFFICES IN 17 MAJOR CITIES

Continued from page 122

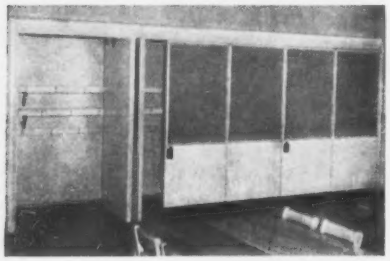
in place. Typical plumbing conditions are presented, along with the most efficient methods of providing openings for each. A number of framed openings and special precast units that can be designed into the job are also pictured. The Flexcore Company, Inc.

On Free Data Card, Circle **224**

SPECIAL EQUIPMENT

Schoolroom Wardrobes Recess Into Wall

New, steel, classroom wardrobes, designed for installation in wall recesses, have doors operated individually, in pairs, or vertically. Available in 3 baked-enamel colors to harmonize with interiors, "In-A-Wall" can also be equipped with chalkboard or corkboard on its doors. Eight-page catalog gives full specifications for each type of operation, with data on hardware, materials, and accessories. Richards-Wilcox Manufacturing Company.



On Free Data Card, Circle **225**

Electronic System for Language Instruction

Private tutoring in a large classroom is made possible by "Electronic Learning Center." System does not replace traditional classroom teaching, but can be significantly helpful in such subjects as language. Quiet concentration by each student is permitted, with communication between student and teacher taking place selectively on the special sound system. Control console, giving many possibilities of conversing and recording, is operated by the teacher; students are seated in individual cubicles, each equipped with earphones and microphones. Introductional brochure, 10 pages, gives general description of system and suggests various room layouts. American Seating Company.

On Free Data Card, Circle **226**

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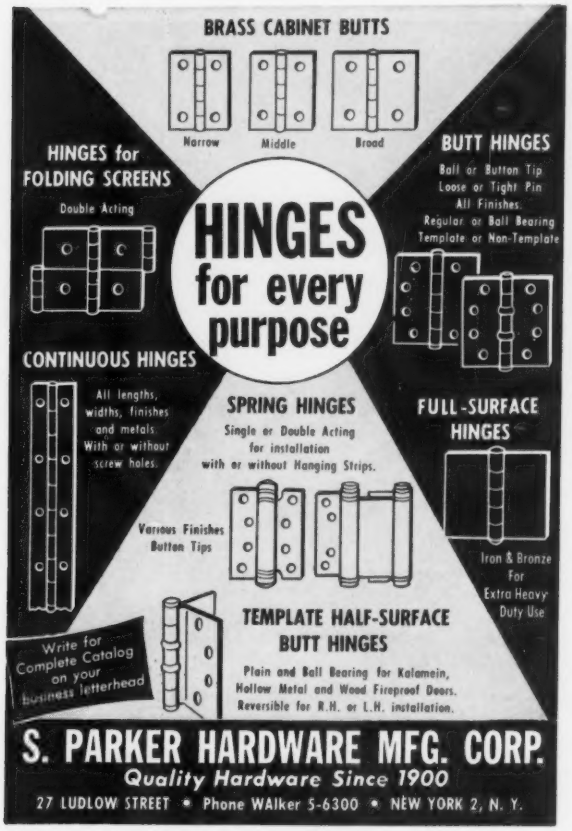
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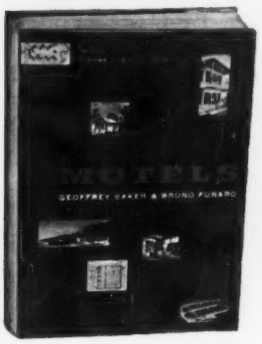

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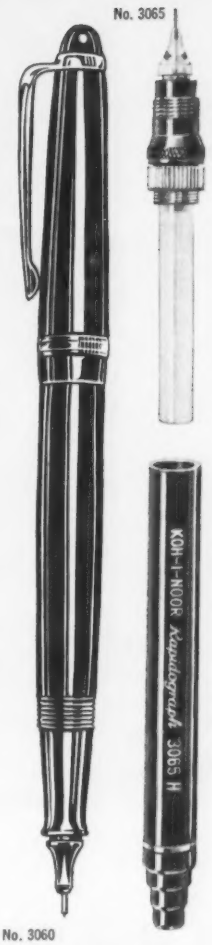

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For more information, turn to Reader Service card, circle No. 328

IN JUNE, A P/A THEME ISSUE: PLASTICS IN ARCHITECTURE

Architecture is quite possibly on the brink of a new technological revolution to be caused by the increasing use of plastics. Even today, 16%—by weight—of all plastics produced are used in construction. Every indication is that this percentage will increase tremendously in years to come.

To give architects a sound background in the use of plastics in architecture, P/A will devote its entire JUNE Issue to the subject. Experts in the architectural, engineering, manufacturing, research, and chemical aspects of the problem have lent their enthusiastic co-operation to make this an issue which will be referred to over and over again. William Demarest, Director of Plastics in Buildings of the Manufacturing Chemists' Association, will discuss the architect's role in the plastics field, the characteristics, advantages and disadvantages of plastics, and will present a valuable Glossary of plastics terms. In "Utilization of Foams," R. N. Kennedy of The Dow Chemical Company will acquaint architects with the performance expectations of cellular plastics. The vital question, "Are Plastics Structural?" will be reviewed and answered by Frederick J. McGarry of Massachusetts Institute of Technology. Lee Frankl, designer and researcher of Dennis, Mass., has for many years experimented in the design and construction of buildings, using plastics to a great extent. In June P/A, he will share with the reader the benefit of experience in this field, errors and discoveries made. Consulting Engineer Armand G. Winfield, in "Methods of Embedment" will examine the decorative possibilities of plastics containing small non-plastic objects. Allen Cleneay, Chief Architect of Monsanto Chemical Company, will give a performance report on the 60 different applications of plastics used in Monsanto's Inorganic Chemicals Laboratory by architects Holabird, Root & Burgee. The managing editor of *Chemical & Engineering News*, George H. Bixler, will provide an inside look at "The Role of the Chemist" in the search for tomorrow's improvements in architectural plastics. Three of P/A's regular features, INTERIOR DESIGN DATA, SPECIFICATIONS CLINIC, and MECHANICAL ENGINEERING CRITIQUE, will tie up the package for June with fully illustrated reports of plastics developments in those areas.

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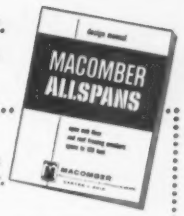

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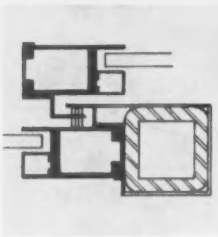

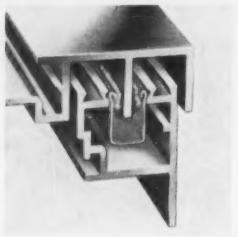

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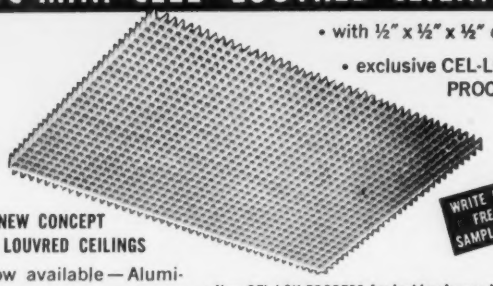

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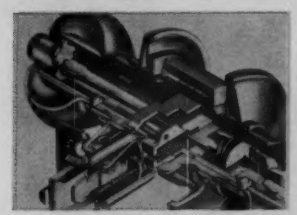

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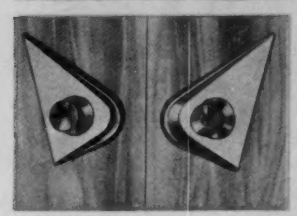

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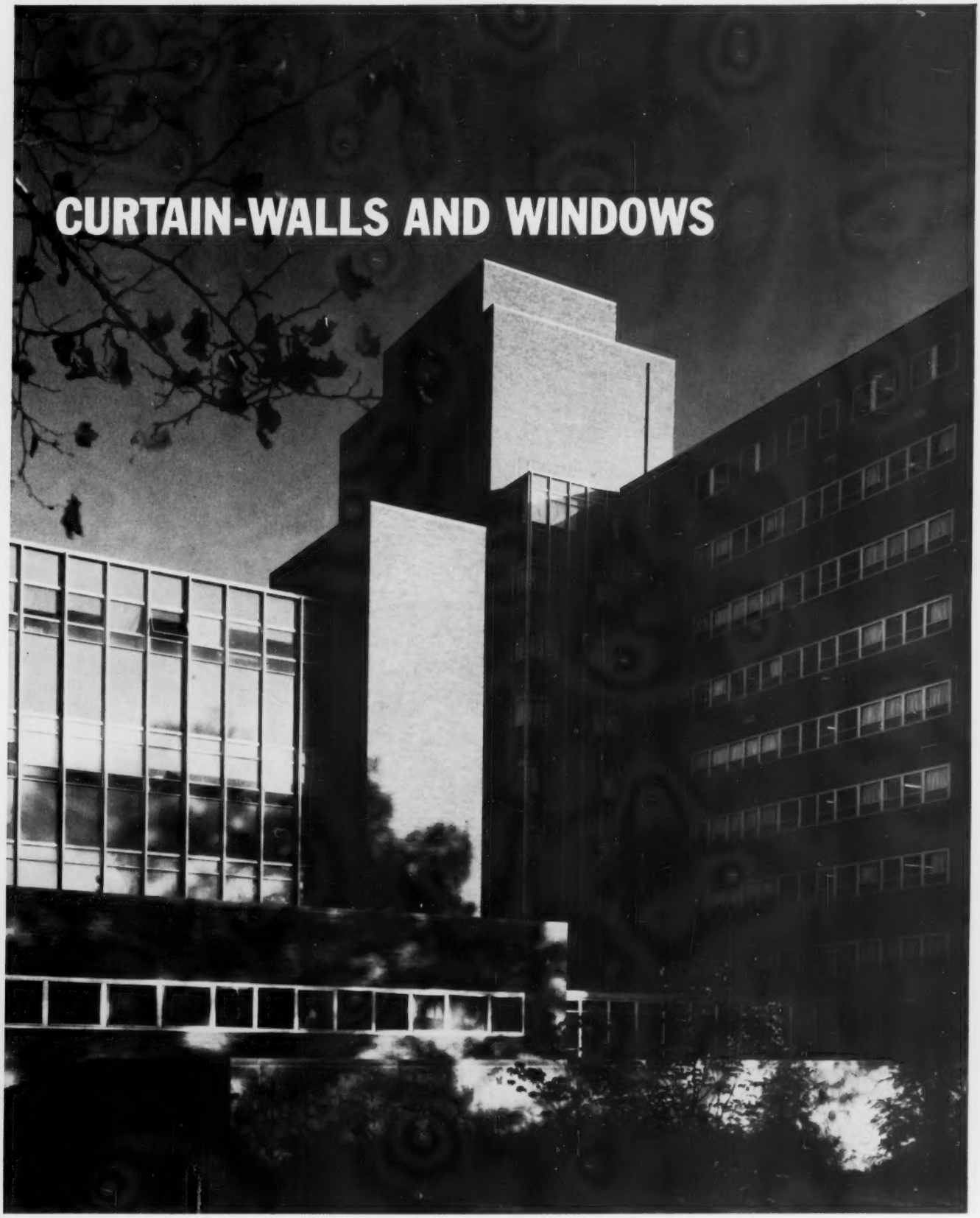

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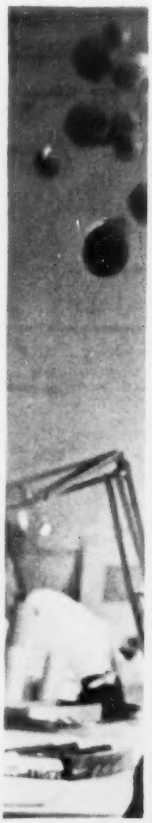
HOUSES AND LANDSCAPES

A Chinese writer described an ideal house: "Inside the gate there is a footpath and the footpath must be winding. At the turning of the footpath there is an outdoor screen and the screen must be small. Behind the screen there is a terrace and the terrace must be level. On the banks of the terrace there are flowers and the flowers must be fresh. Beyond the flowers is a wall and the wall must be low. By the side of the wall, there is a pine tree and the pine tree must be old. At the foot of the pine tree there are rocks and the rocks must be quaint. Over the rocks there is a pavilion and the pavilion must be simple. Behind the pavilion are bamboos and the bamboos must be thin and sparse. At the end of the bamboos there is a house and the house must be secluded. By the side of the house there is a road and the road must branch off. At the point where several roads come together, there is a bridge and the bridge must be tantalizing to cross. At the end of the bridge there are trees and the trees must be tall. In the shade of the trees there is grass and the grass must be green. Above the grass plot there is a ditch and the ditch must be slender. At the top of the ditch there is a spring and the spring must gurgle. Above the spring there is a shed and the shed must be square. At the corner of the shed there is a vegetable garden and the vegetable garden must be big. In the vegetable garden there is a stork and the stork must dance. The stork announces that there is a guest and the guest must not be vulgar. When the guest arrives, there is wine and wine must not be declined. During the service of the wine, there is drunkenness and the drunken guest must not want to go home."

". . . unconscious anonymous tracks in the landscape . . ."
JAMES C. ROSE

It is difficult to visualize any house out of the context of its setting. Moreover, due to the small size of residential buildings, the scale between house and nature is such that natural forms are often the most important elements in a composition. Poor placement of a house and bad landscaping can ruin the best architecture. P/A asked three well known landscape architects to state the principles guiding their work and to analyze the landscaping of the six houses presented in this issue. Their response was enthusiastic: "For such a long time there were so few people doing good work that we tended to become uncritical and grateful for any effort which advanced 'modern design.' As a result, we tended to overlook too many things and it is high time that we should begin critical evaluation of landscape architecture as well as building architecture." All three felt, however, that their criticism would be in many ways limited: "In evaluating the projects, we have had to rely solely on graphic, photographic, and verbal description. Not having been affected by the uniqueness of the sites, affected by the smell of the air or the color of the sky, nor affected by the movement of the terrain in relation to the surrounding landscape, our criticism is proportionately restricted." Another comment was: ". . . buildings are photographed far too soon for their own good, before plantings have grown, before spatial characteristics have been defined, before the intent—so important to our designs—has been accomplished. Bare bones are not always what they should be. With all this, then, I'm perfectly willing to admit that some of my critique may be wrong." It should be noted that the landscape architects were critical not only of the landscaping efforts of the architects, but also of their own kin, and that P/A's assignment forced them into considerable soul searching. As one critic put it: "Since I share with my colleagues the values, the yearnings, and the disappointments in the search for a means of self-expression, I also share with them the awareness of the difficulties inherent in the various methods. My comments, therefore, are self-criticism as well as observation on these projects."



"... magical qualities
of man's
relation to nature ..."
LAWRENCE HALPRIN

"... organic growing spaces
which permit
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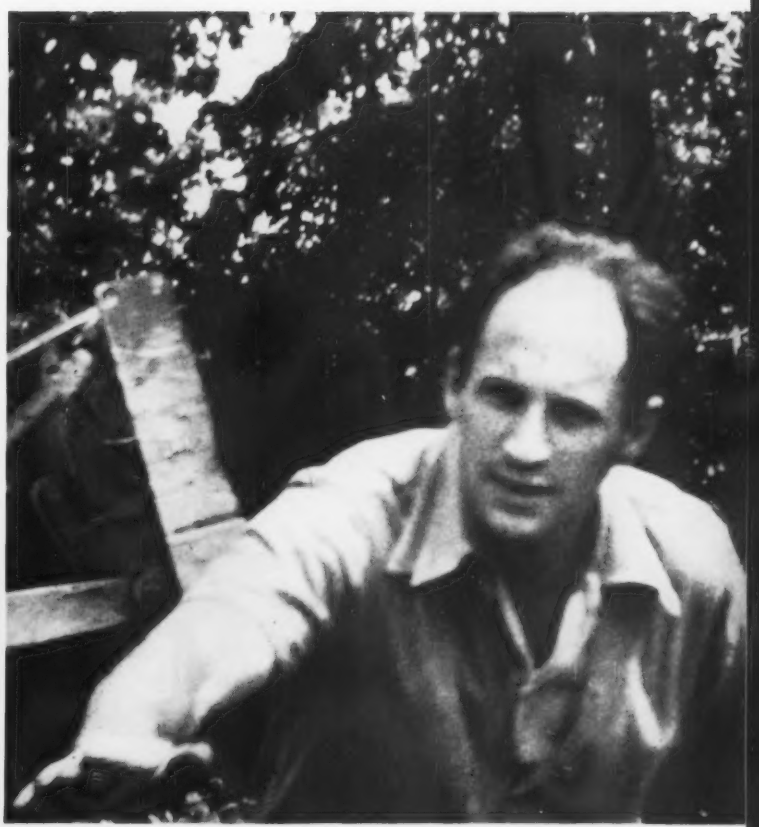


JAMES C. ROSE of Ridgewood, N. J.: When I look at our landscapes, my reaction is always a question: since they are products of a single culture, why do they not share a common tradition? This is not the same as to ask why they are not more alike. For I believe they would actually be more different if they had in common more of the tradition I speak of.

I speak of the tradition of anonymity; the tradition that produced the corn crib, the granary, the covered bridge, the power dam, the electric station, the quarry. These seem to me a few of the unconscious tracks man leaves when he invades the primeval landscape and, as such, they constitute the beginnings of an indigenous tradition in the manmade landscape.

Of course, every corn crib or power station is not a work of art. Even at best they are seldom poetry but, on the average, they are darn good prose—an attribute not always found in the more intellectuallized architecture. They are really a kind of folk endeavor. Their method is as unconscious of form as a beavers' dam and, like a beavers' dam, their form proceeds instinctively. This seems to me the very quality that is so often lost when the endeavor becomes "architecture." It is not unlike the farmer who builds a beautifully organic barn for his cattle, but insists upon "American Gothic" to house his family.

The problem, then, is how to retain this instinctive drive while also endowing it with feeling and awareness, with interrelations and fluidity—with the magic that transforms the unconscious instinct into enchantment which is not self-conscious.

This is particularly difficult in the American home landscape because, as a nation, we have matured under mechanization and have not established an indigenous landscape or garden tradition. We have borrowed the English lawn and perennial border, we simply adore the Japanese look, but take any American community, and—aside from that part of the natural landscape which the builder, the machine, the architect, and the owner have found indestructable—what do you have that is an indigenous expression? The foundation planting.

Professional attempts in the past quarter of a century to establish a landscape tradition—with a few notable exceptions—have been more like the farmer's house than his barn. Of course, the professional approach is more intellectual and more rationalized and in "better taste." But in most instances it is excruciatingly self-conscious; it has more of the personal pronoun than the instinctive tradition.

I would be the last person to deny the personal pronoun. But I think the secret lies more in method than in ego projection. And that is what we can learn from the unconscious, anonymous tracks in the landscape. First, we have certainly over-emphasized the visual in design. However, it is quite popular today to put last things first. The client wants to know "what it is going to look like." The magazines want pictures. I even know an architect who starts designing from the point where the camera will be set up. But I doubt very much that any of our anonymous friends ever built a silo to silhouette against the setting sun—and yet, they always seem to do so. We are more interested in what looks right than what is right. We are still making pictures—some of them quite pretty—but we are unwilling to admit that the eye is a receptacle, that the visual is a result—and an intellectual one at that—not the beginning, where only feeling is involved. We do not seem to realize that the *image* is psychic rather than optic.

For my own part, I just like to solve problems. They happen to be landscape problems, and I find it great fun. I don't mean just ordinary fun, like throwing a ball. I mean great, cosmic fun—something like what the French must mean when they speak of *joie*. And I never do picture sketches for either the client or myself, because I have no idea "what it is going to look like." I try to keep in mind those anonymous pioneers with their myopic methods and to illuminate them where I can. I recognize the enormous importance of the dull spots in any design. I use repetition to the point of, but not including, monotony. I insist on a disciplined ritual in *experiencing* the result and then depend on memory. I never "create a picture." I have too much respect for the personal pronoun for that.

LAWRENCE HALPRIN of San Francisco: Gardens, to me, are esthetic events whose very nature is change. Besides fulfilling functional requirements, their main purpose should be to capture, in capsule, the magical qualities of man's relation to nature.

Designing a garden becomes a partnership in which the garden designer guides the activities. The elements with which he works are clear. First comes the land with the natural configurations of slopes and pitches, the existing trees and outcroppings; he works with them as a sculptor would with clay. Within this configuration and this "place" he will conceive of an environment for living in which areas vary in degree of constructed environmental control. One area will be completely roofed and walled, heated and cooled; there the elements are excluded and a house exists. Other parts will be controlled by structure to a lesser degree—by walls, paving, fences. Then the whole complex will be interwoven into the native landscape so that rhythmical sequences result and the design becomes an activity rather than an object.

A garden in this sense is not so much a designed object but an experience in time—certainly in space. The essence of nature is growth in time, change in season, variation in light, movement. And in a garden the goal is to participate in this sense of change—to achieve relation to these activities. I think, too, that we should understand the inherently baroque qualities of the outdoors and the vitally kinetic configurations of gardens. I believe in the non-rigidities of the world around us, in the everchang-

ing qualities of natural spaces and the non-static characteristics of natural phenomena. I see space as a medium for motion. I see garden designers as choreographers and gardens as spaces in which organized movement takes place. There are many needs, many rhythms, many levels of energy—that of the child active at play, the slow easy motion of walking along a path, the poised arrested movement while sitting on a bench. This demands a rejection of formalistic preconceived solutions. Within this attitude, I feel, lies our modernism. A garden, to me, is a spontaneous, naturalistic phenomenon—not in its form, but in its method of design; not in its copying of nature, but in its process; not in its materials, but in its intent.

KARL LINN of Philadelphia, Pa.: The recent close affiliation of landscape architecture with architecture has been beneficial to our profession by instilling an awareness of the dynamics of design and of spatial organization. But landscape architecture now should free itself from architectural subordination and find its own modes of expression, practice, and education.

The landscape architect, unlike the architect, will not see his work come to maturity. Yet, in order to design effectively, he must attain the completeness of his creative experience. The architect must commit himself to the details of his design at the drafting board; the landscape architect, who deals each time with unique natural elements, must articulate them on the site. Architecture is, therefore, finite design and landscape architecture is continuous design. This applies to plants, as well as to terrain. In the latter, because soil is a plastic medium, the landscape architect should refine its nuances on the site, just as a sculptor is affected by each vein in the marble. This re-establishes the totality of his creative experience. The most marked difference lies in the fact that plants are living design elements. The landscape architect, therefore, also deals with growth, with design potentials.

Today, the landscape architect who is often under the influence of mediocre architecture, thinks of open spaces as cubistic and static enclosures. He thus wastefully ignores the unique potential inherent in his profession. It is a peculiar privilege of the landscape architect to deal with natural elements as design components and to function within this natural scene as the area of his professional life. By becoming aware of the natural laws governing him and nature around him, he gains an opportunity for a personal renaissance. Nature is not only his guide but also a severe critic who challenges him to achieve a sense of fittingness in his work similar to that manifested in all natural forms and patterns.

If the landscape architect is moved by and moves with nature, he will detect the vibrancy of open space and will be unable to think of it as a void; he will comprehend the design potential of plants and experience the surging expressiveness of trees which, as Van Gogh depicted them in his "Starry Night," extend beyond the physical limits of their branches and leaves and merge with the cosmos.

In search of a common functioning principle of all organic design, living and inanimate, we can draw upon the findings of the scientists who recognize that we deal with the manifestations of energy systems. On the freest end of the hierarchy of natural order there is the purest expression of unrestrained cosmic energy: the pulsating quality of aurora borealis, the spiral configurations of nebulae and swirling hurricanes. The fluid-energy systems of gaseous clouds and liquids assume their characteristic forms and patterns in interaction with forces present in their environments. Somewhere in the middle of the hierarchy we encounter the forms of living organisms. The jelly fish, whose membrane restrains and confines its energy, is still resilient and flexible enough to show the pulsating movement of life. Similarly, the quiver of a baby is an expression of the universal forces of life. Still more confined organisms, such as trees, have their own structures of energy channels; one can easily mistake an aerial photograph of the tributaries of a river for the branch structure of a tree, or the veins of a hand, or a burst of lightning. At the other extreme of the hierarchy—in solids—the cubistic order of crystals and minerals represents, through high compression, the conversion of energy into matter. Thus all natural form is recorded movement, the frozen history of growth.

All manmade forms are the externalization of energy—the free flow of creativity—which follows these same natural laws. Good design, therefore, will manifest its own movement and growth—a centrality radiating to its potential unfolding. Man will successfully achieve in his creation a sense of appropriateness only if he respects this hierarchy of organic design.

Urban planning deals with high compression levels corresponding to the realm of crystals and minerals, and the best of such planning will have a growing structure in its sequence of open spaces.

Landscape architecture should define open, truly fluid space with elements from many levels of the hierarchy of organic design. In contrast to earlier artistic expression in landscape design which either followed arrangements of axial symmetries of static geometries, or romanticized nature, contemporary landscape architects have tried to extract essences of underlying natural laws through stylized or symbolic expression of energy systems in dynamic equilibrium. Mondrian, with his asymmetrically balanced geometries, influenced landscape architecture as much as he did architecture. In many instances, though, landscape architects have expressed this symbolic language in an intellectualized, self-conscious fashion, resulting in trade marks and formulas. But once the landscape architect permits natural laws to govern his work, he will create organic growing spaces which permit the growth of man. This is the great potential.

Photos: Ezra Stoller

HILLSIDE HOUSE

"... man's position before the poised avalanche of the automobile ..."

SAUSALITO, CALIFORNIA
MARQUIS & STOLLER
ARCHITECTS
LAWRENCE HALPRIN
LANDSCAPE ARCHITECT

The client, an unmarried college professor, needed a house appropriate for entertaining small groups, yet congenial to study and contemplation, and adequate to accommodate her large record collection and several thousand books. The site was on a steep hillside.

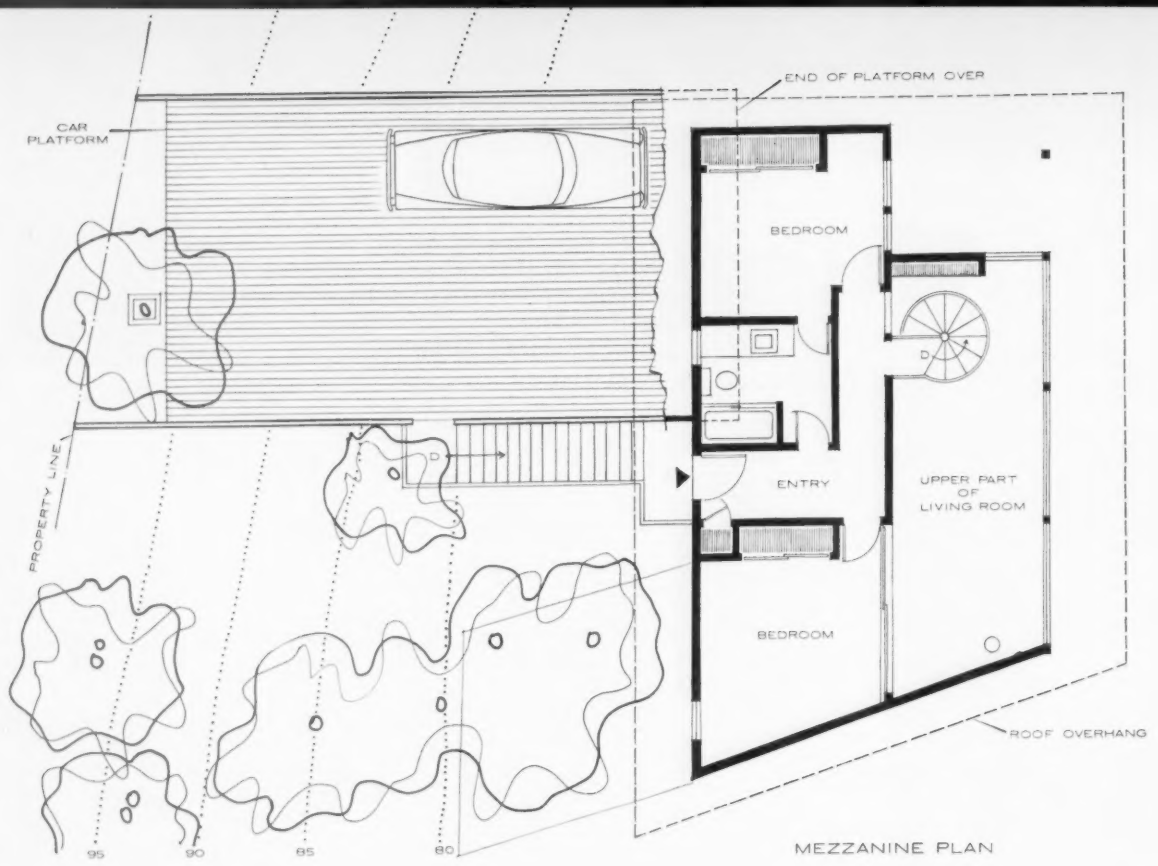
The architects solved the problem by designing a series of platforms supported on a "trestle" type of construction with wood posts and braces resting on piers, tied together by grade beams; the grade beams are anchored into walls at points where the platforms meet the ground. The utility room beneath the main floor is sheathed in plywood and acts as a rigid shear box. The cantilevered deck is supported by steel beams.

Cedar shingles, which require no finish and blend well with the setting, are used on the exterior, and hemlock flooring is used for interior siding; partitions and ceilings are faced with gypsum board; floors are of red oak. The metal fireplace was designed and executed by Sculptor Keith Monroe. The architects say that ". . . in our economy it is almost as reasonable to hire a famous sculptor as it is to buy a commercially produced stove."

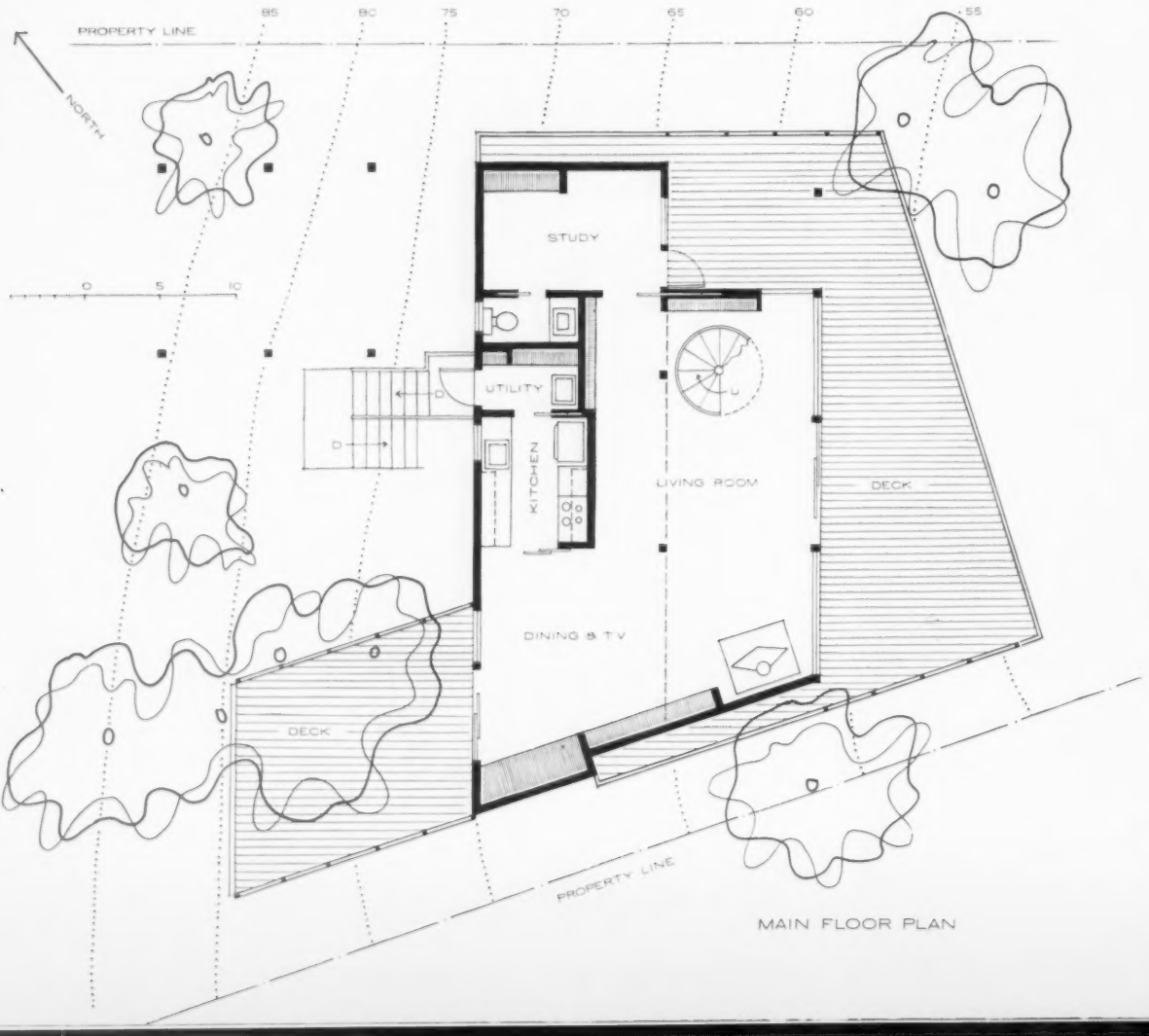
The architects commented on the landscaping: "This house is a negation of the typical house surrounded by a planned garden. It touches the land at only a few places and every effort was made to leave the hillside in its natural state. This was less a philosophical than a functional decision because of the difficulty of the existing landscape. It might be more correctly said that we were faced with a siting problem rather than a landscape problem.

"We were given a piece of heavily wooded, relatively narrow, and extremely steep property—so much so that it was considered 'unbuildable.' The community required off-street parking; the owner desired privacy, the view, and preservation of the existing feeling of a rugged wooded hillside. We accomplished this by a series of platforms. First there is the car platform, then one goes through a gate in the fence and down a flight of stairs to the entrance on the mezzanine. At this point there is a dramatic prospect of the living room and the view beyond. Then one goes down the spiral stair (which, incidentally, also serves as access to the two-story bookshelves) to the main floor. At this point we felt it was important to re-establish contact with terra firma. This we achieved by having the back deck act as a bridge leading back to the ground. From there, steps on grade continue down to the utility and storage room. The car platform, deck, and utility room are, except for piers, the three points of contact with the property.

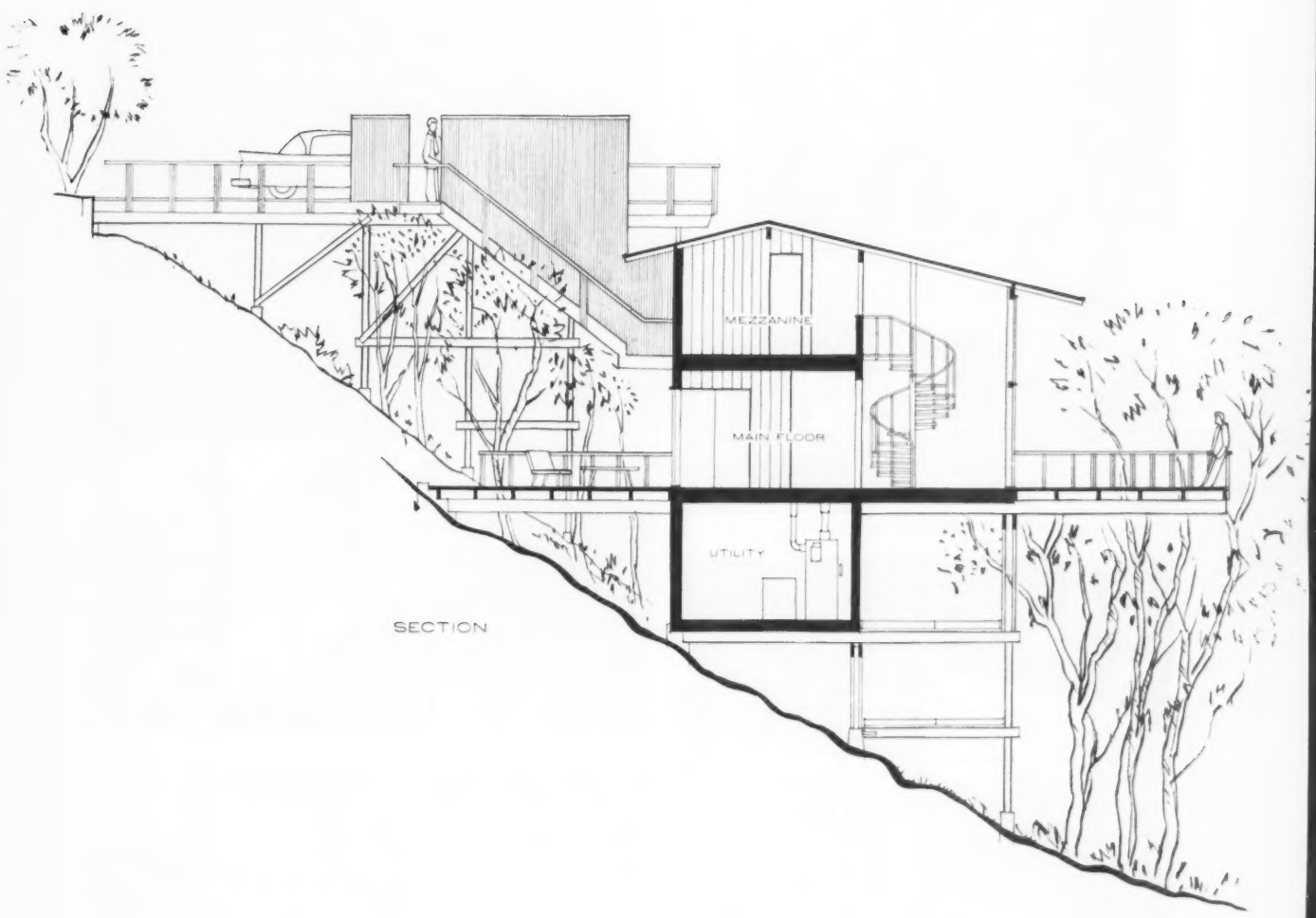
"The created landscape was then confined to the following: Halprin's first effort was to give the owner the privacy she desired. This was done by judicious planting at the road and well-planned screens and fences on both decks and at the car port. Second, Halprin tried to emphasize and dramatize the existing trees and rocks. This was done by weeding out the non-essentials and by planting new ground covers, flowers, etc., to complement, bring out, and dramatize the best of the existing conditions rather than compete with them. Finally, it was decided that, since most of the outdoor



MEZZANINE PLAN



MAIN FLOOR PLAN



SECTION

living was to be done on decks, they should have a variety of feelings. Because the view deck dramatically cantilevers over the trees and towards the view, the rear deck was given a sheltered, protected feeling; hence the trellis and more fence.

"From this resulted one of the most satisfying and successful spatial relations and experiences in the entire house. When one stands on the rear deck one is standing at the *base* of the trees, snug, sheltered by the trellis and under the treetops; yet, because of glass doors on both sides, one is aware of the view through the house. Walking into the house, one is first under the mezzanine and still sheltered; then one passes into the dramatic two-story living room and, finally, onto the wide, open, cantilevered deck over the treetops. One has passed through a series of spatial experiences and literally climbed a tree. Starting at the foot of the trees and walking 50 feet across the house, one has risen 30 feet above the ground and ended in the treetops. This is not just a *tour de force* but a solution offering the owner of a small house a variety of spatial experiences to enjoy."

Two-story living room as seen from mezzanine.

Sheltered rear deck leads back to the ground.

View from mezzanine across living room.

The bedroom shares the view into treetops.

Spiral stair leads down into living room.

CRITIQUE

Lawrence Halprin: We worked closely with the architect and this is a good example of collaboration based on mutual understanding and respect. The site, with a native stand of many tall groupings of California live oak and bay trees, faces southeast to the Bay on a steep slope and is very beautiful and poetic. Its mood varies. Sometimes it is bathed in sunlight and the leaves of the trees sparkle and reflect the light; sometimes the fog swirls up through the Gate and cloaks it all in a white mist. We tried to keep as much of what was there as possible and through design to enhance it. We tried also to create as many varieties of experience as possible, with decks, terraces, and nooks. The trees were jealously guarded but trimmed and thinned where it was necessary to open views, and reinforced where closing of vistas was required.

James C. Rose: I would single out this solution as one which successfully embraces the anonymous tradition, and still makes a clear statement of its own with some feeling. It has the rare quality of inevitability.

The building fits together nicely, and clings to the site. I have a suspicion that this is an instance where more freedom might have led to a less interesting solution.

Karl Linn: This beautiful, steeply sloping site has magnificent views and is so narrow in width that the client must be tempted to put on blinders to reduce the peripheral vision and remove the views of adjacent buildings. Not a criticism of the landscape architecture (for I am certain that not much could be done to screen the neighboring sites and to establish organic consistency), it is rather a criticism of the trend that sacrifices total integration to economy. Still, it does conflict with Halprin's oft-repeated statement that "we in the Bay Area are living in the landscape not only as spectators but actively participating in it."

I think Halprin has successfully defined open space by creating a sheltered rear terrace to which one can withdraw, while the cantilevered front terrace with its view of the far horizon establishes the proper universal context for the educator-client.

No matter how functional and practical for the particular site requirements, I cannot get accustomed to the garage towering above the residence. The constant awareness that one resides under four wheels must be depressing, and listening to the drops of oil from above must be too ominous a substitute for rain. It bothers me as a design, since the delicate structure of the residence clinging to the slope looks in a precarious position, overpowered by the garage. Worse, to me it is a painful graphic representation of man's position before the poised avalanche of the automobile.

HARBOR-FRENCH & CO.

BOSTON TOWN HOUSE

"... more esoteric and timid than necessary ..."

BOSTON, MASSACHUSETTS
KROKYN & KROKYN, ARCHITECTS
SASAKI, WALKER & ASSOCIATES
LANDSCAPE ARCHITECTS

The program called for two luxury apartments on a narrow city lot 22′x120′. The lot is in Boston's Back Bay, an area of town houses now used for small apartments and furnished rooms. A house which had previously occupied the site burned down years ago, and the 12″-brick party walls and utilities remained.

The four-story building, containing two duplex rental units, was built inexpensively by constructing new glass front and rear walls and using the existing side walls and foundations. The side walls support 10″ WFs, 4′ o.c., which carry a 3″-plank floor acting both as sub-floor and finished ceiling. In order to create a two-story-high living room and have a third bedroom, one bedroom is hung from the floor above. On the interior, structural elements are left exposed. Finished walls are the cleaned-brick party walls and sheetrock partitions; flooring is parquet and tile.

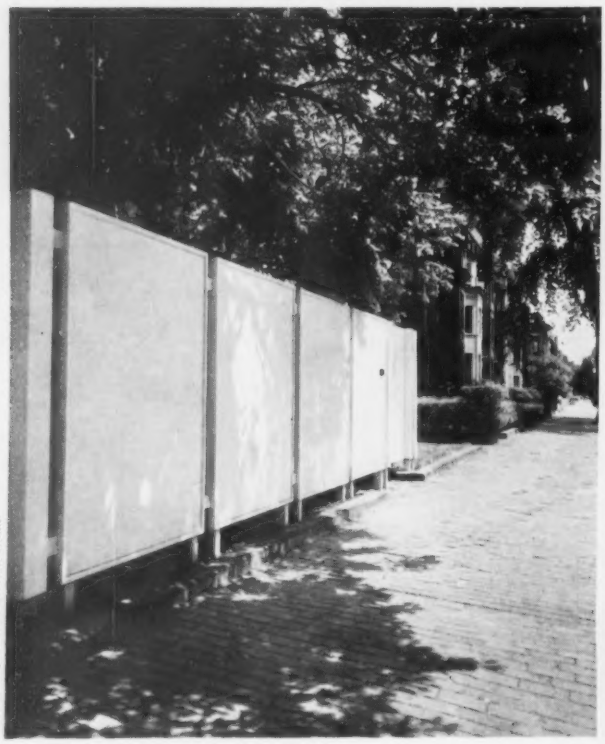
The new façades are all glass (from 4″ above each floor to ceiling), framed in steel mullions and pressed-metal fascias. It is difficult to see into the building from across the narrow street, because it is set further back than its neighbors. The architect writes that "only those people who are directly across the street and above the third floor get a direct view, and since the front is almost constantly in shadow, even this is minimized. We have used obscure glass in bedrooms and this, plus normal curtaining takes care of any further visual disturbance."

Individual air-conditioning units replace vented sash to supply ventilation. The gas-fired heating plant, feeding down to baseboard radiators, was put on the roof to save valuable first floor space. Because the existing facilities were fully used, the cost of the job ($11.85 per ft) was unusually low.

The architects commented on landscaping: "The lot fortunately was left with two magnificent cherry trees which were slightly pruned and left to screen the building. The project was originally and constantly conceived with the garden wall so that the eventual tenants would feel, on entering the gate, completely released from the nondescript 19th Century surroundings. Sasaki has created a fantasy of landscaping within this exterior court. The building, because of its thin, geometric, linear, somewhat Mondrianish exterior, lends itself to Japanese landscaping detail. There is a formal informality about the turkey grits, the carefully-chosen vertical stones, casually but precisely placed, and about the beautiful yew. Since the building is so completely of another period than its neighbors, to have left it barren would have made it an anachronism on the street; but by its interrelation to the small site, all other buildings on the street become anachronistic.

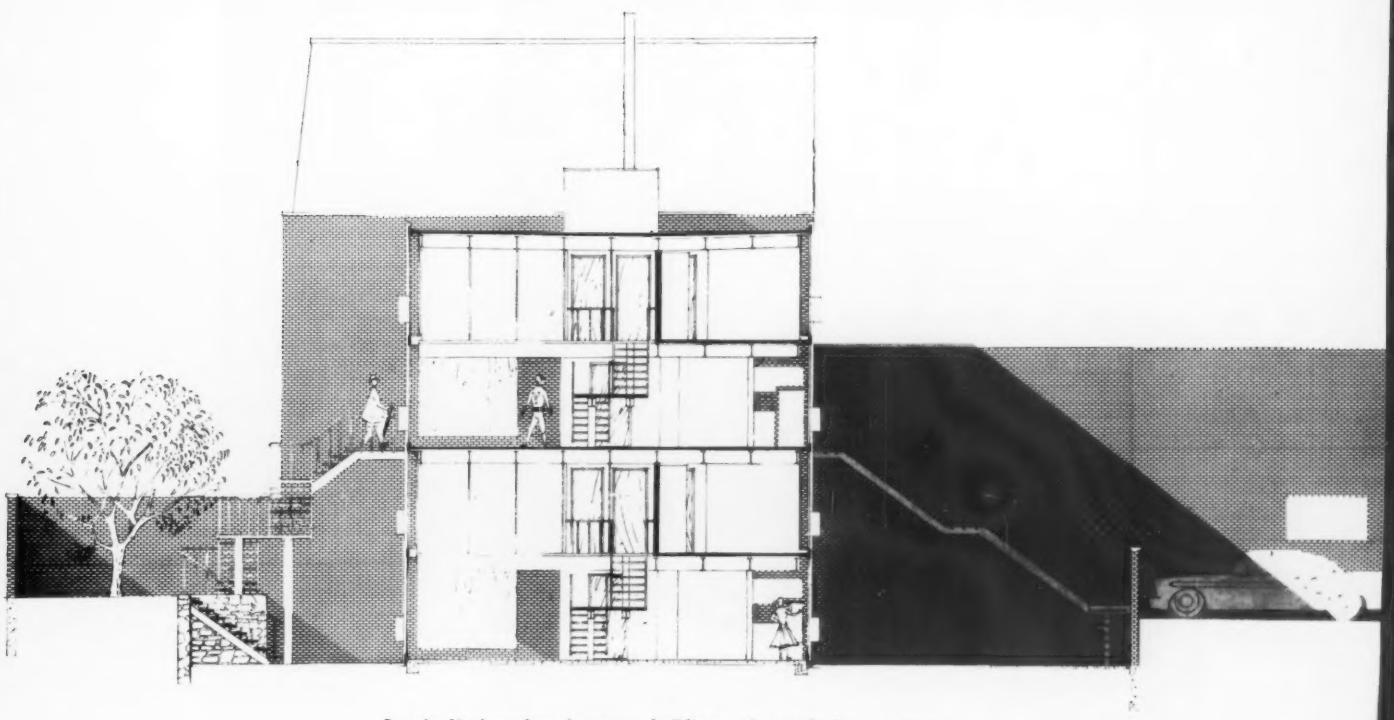
"When the landscaping material was brought to the job, Sasaki and three men from his office, three draftsmen from this office, and myself, the heating engineer and one of his draftsmen, the structural engineer and one of the contractor's laborers, came to the job to install the landscaping. This was the first time in my architectural experience that the various people who normally work on the board became involved with the specifics of construction, somewhat similar to the community building projects that go on in a small town."

A six-foot plywood wall screens the front garden.

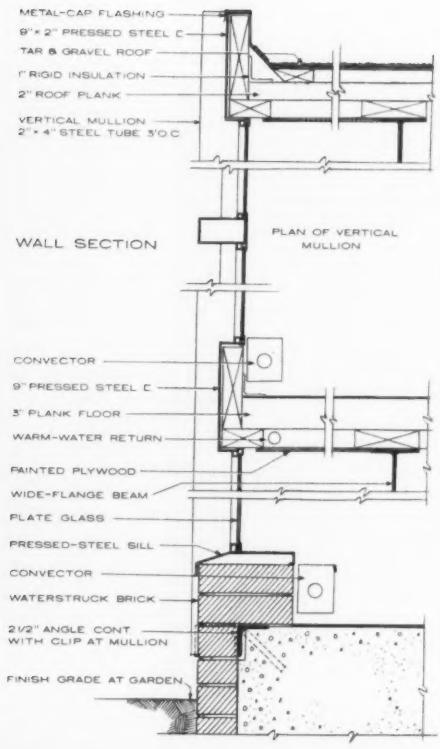


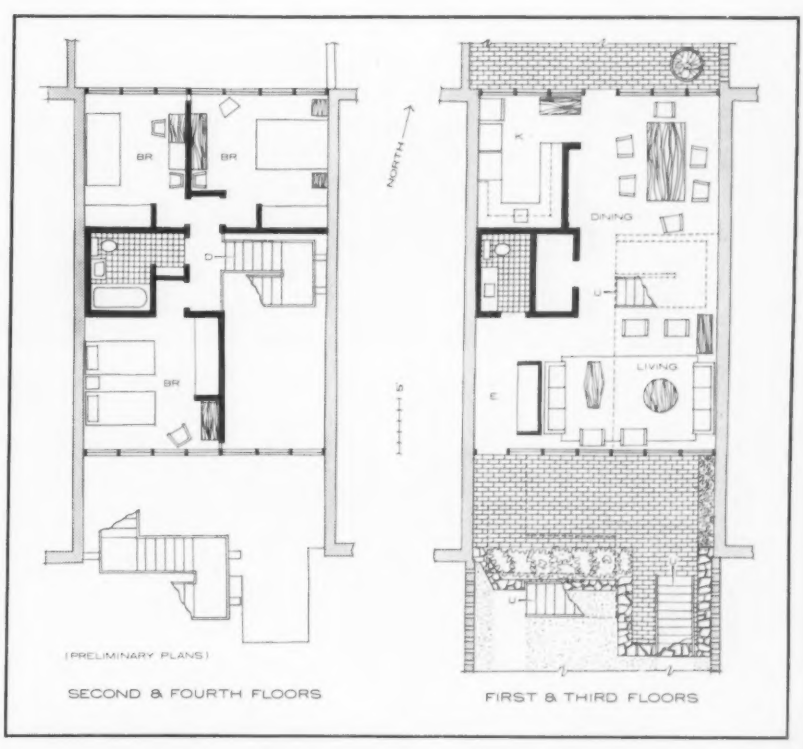
Parking area and service are at rear.

Photos except as noted: Louis Reens



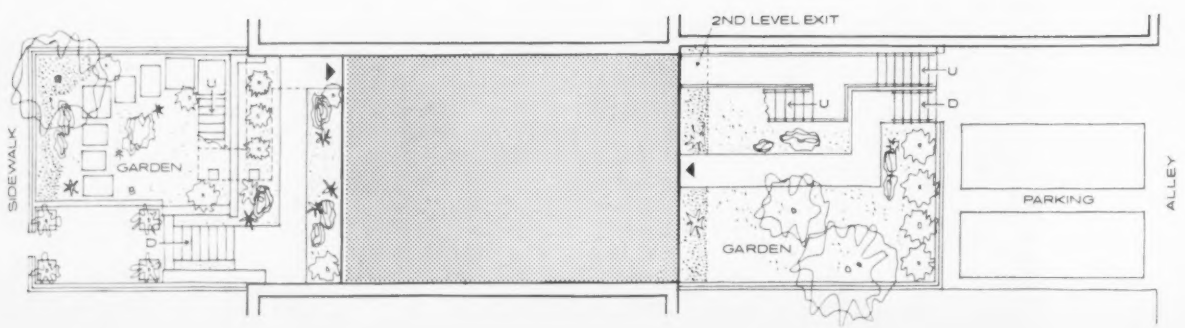
Longitudinal section: four-story building with two duplex apartments.





In each duplex, the low entry (top left), *under the front bedroom, is separated from the two-story-high living room (photos* top right) *by a coat closet. Stair to bedrooms* (left) *separates living from dining areas. All structural elements were left exposed.*

Within the enclosed front garden court, stairs lead to each apartment (right).


2ND LEVEL EXIT
SIDEWALK
GARDEN
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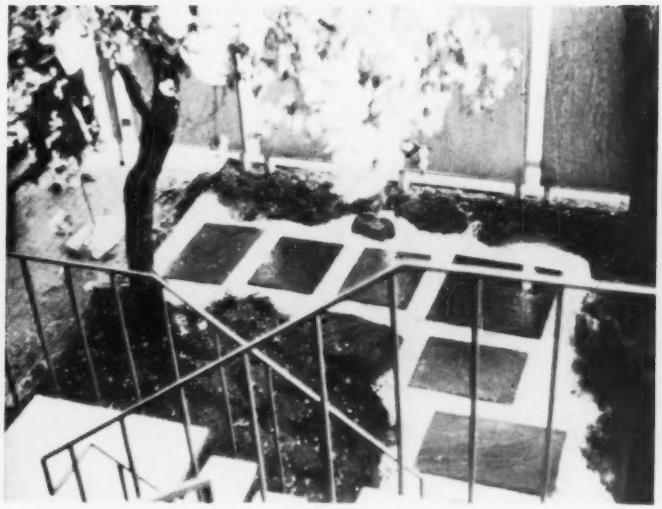
PARKING
GARDEN
ALLEY



Photos: Courtesy of Krokyn & Krokyn

CRITIQUE

James C. Rose: This adroit solution has the inventive brilliance that ought to be the stock and trade of any architect; unfortunately, such adroitness is the exception rather than the rule.

Both the structure and the landscape seem to me to bridge the gap between clear basic thinking and emotional import without becoming self conscious.

I find the landscaping slightly more esoteric and timid than necessary; it leans heavily on pattern and symbol which are not stated strongly enough to carry the scheme; it needs more third dimension to relate properly to the structural volumes.

This in no way detracts from the knowing restraint and sensitivity of the design.

Karl Linn: One of the things that impresses me most about this project is the fact that the engineers, architects, and landscape architects personally shared in the physical execution of the landscape.

The Japanese-styled landscape is said to be justified by the thin and linear, Mondrian-like pattern of the shell of the building. The problem inherent in the Japanese landscape is evident here where the attempt to extract the essences of natural dynamics can be perceived readily. The meticulously but casually placed natural elements, the rocks and plants, should suggest a natural rhythm. Despite the symbolic use of triads and the spilling-over and interlocking of rocks and plants, there is an obvious deliberateness. When the hidden subtleties and mysteries of nature, which these patterns should suggest, become exposed and nearly naked, they become almost ineffectual as a consequence; this is especially contradictory to the fantasy garden which it was supposed to be.

Since few plants are used, they must carry a heavy design load and they ought to connect visually across space in order to establish a subtle dynamic equilibrium of space composition. The immaturity, rather than the choice of plants, leaves the space barren and flat. When so few plants are used, they should be fully developed so as not to defer the enjoyment of the garden to an indefinite future.

Since open space is not defined and softened by powerful-enough plant material, the impersonal hardness of building and walls overpowers the garden and focuses attention on the flat patterns created. The carefully-dimensioned angularity and size of the stepping stones are out of scale with the space available and the stones seem squeezed between the ground-covered mounds around them.

I appreciate the attempt to "relieve the tenants from the nondescript 19th Century surroundings" by enclosing the garden with a fence, but I wonder whether this highly sophisticated fence is not an indiscreet intrusion which clashes violently with the worn cobblestones and the whole neighborhood.

Lawrence Halprin: This project has two aspects which can be analyzed separately. One is the exterior—the street side and its relation to the neighborhood; the other is internal, private, and introverted.

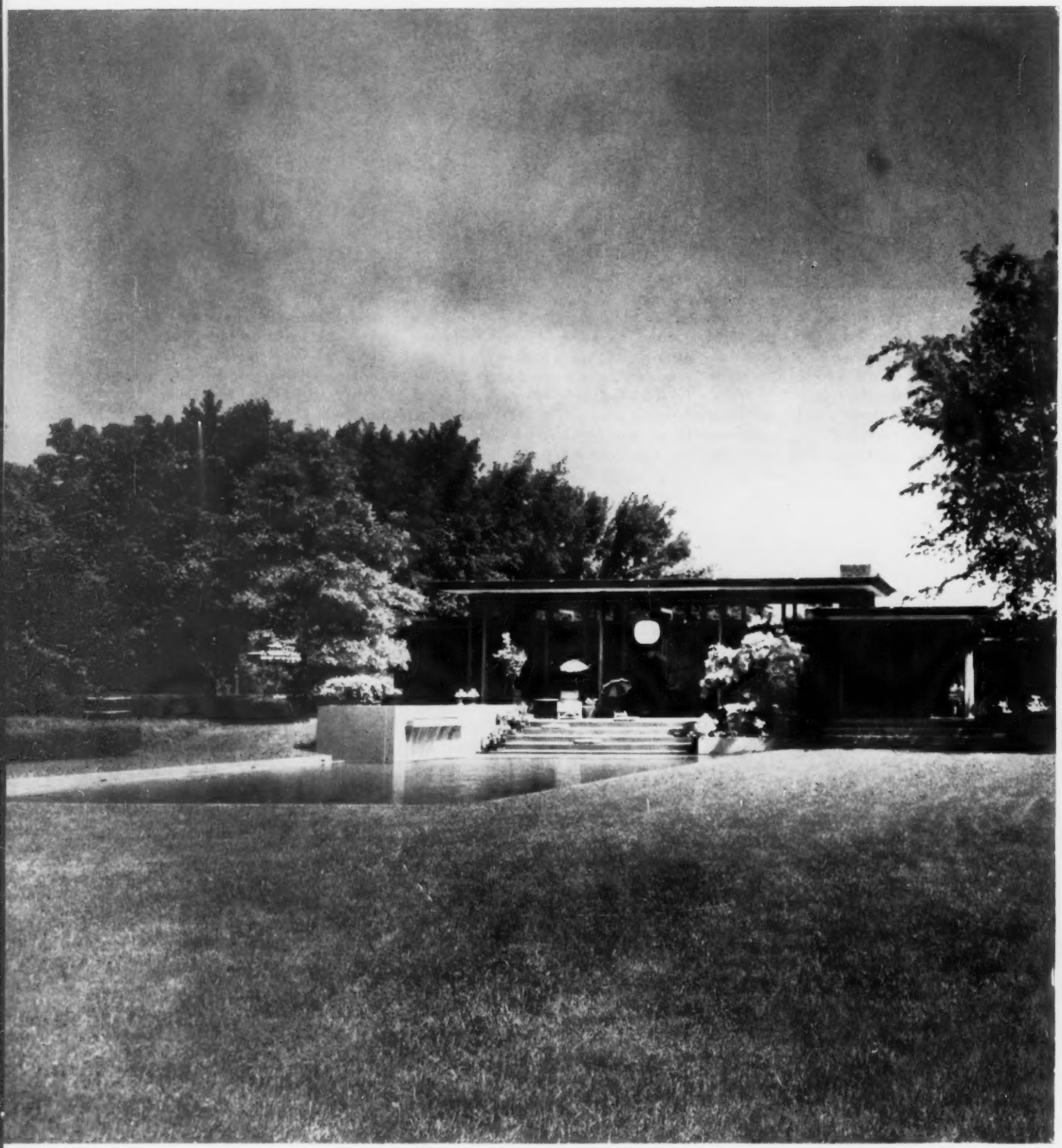
Looking from the street, I find the attitude wrong and unfriendly. Marlborough Street is fairly wide and tree-lined with some very handsome specimens of magnolias (unique for Boston) and is paved in red brick. The houses which line the street are set back, and green front yards extend to the sidewalk. There is a handsome character here which the design of this garden façade violates. The fence is not only jammed up to the sidewalk but also white paneled and, except for the narrow slots, forbidding. The street scene, I feel, would have benefited by a more unforbidding fence, possibly of a different color, and a three- or four-foot setback of this fence would at least have allowed for green planting to carry out the character if not the exact setback of the existing street pattern. I cannot argue with the desire to provide a private courtyard—this seems entirely valid. But I suspect this could have been achieved with more landscape politeness.

Once inside the fence, the garden under its handsome cherry trees has great charm. It must be a pleasant garden outlook for these city dwellers. But details bother me. I find the transition from the street to the elegance of the building troublesome—the brick walk butting into the concrete steps, the iron railing, the artfully-placed stones seem not to hang together. It *seems* remodeled.

Again, I question color. The insistent whiteness of the building troubles me—it is too sharp, too insistent—too overstated. A warmer, quieter color would have been better with the space and the garden.

Inside the garden, itself, I am disturbed by the white over-fine gravel, the too-small stones, by the idea of any stones in this urban setting. It seems almost as if a preconceived notion of what a garden should be like was imposed on an existing situation. It seems to me "Japanistic" in the sense that all the outward symbols have been used and imposed on a given space without any of the inward meanings.

"... pretentious and pompous without subtlety ..."



Photos: Clarence John Laughlin

PAVILION

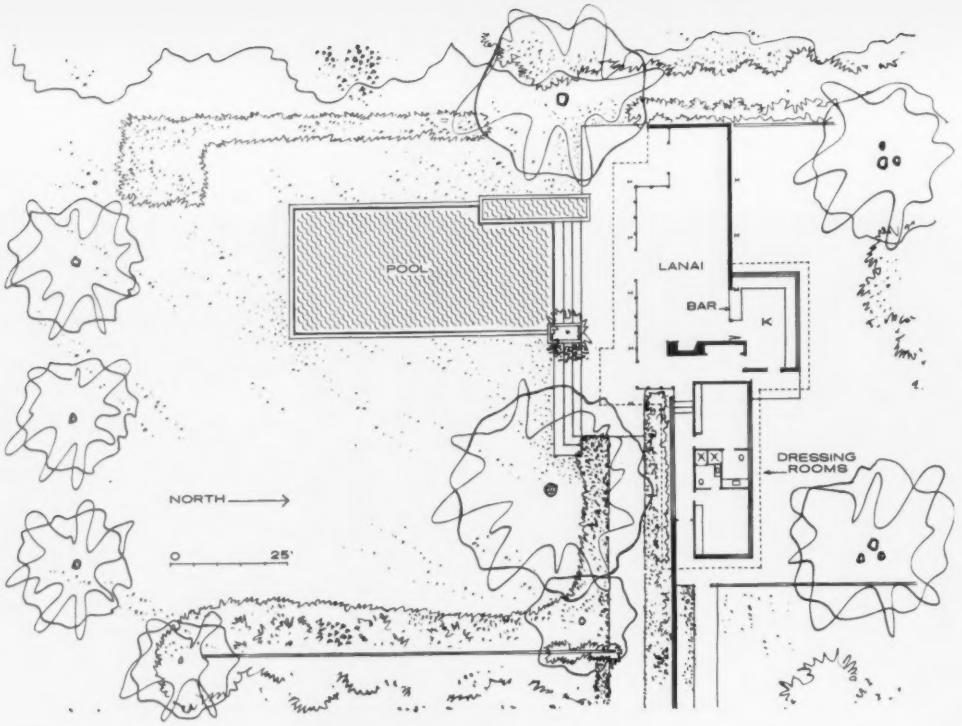
ST. LOUIS, MISSOURI
BERNOUDY, MUTRUX & BAUER
ARCHITECTS

The owners, who live in town during the winter, wanted to obtain as many benefits as possible from outdoor living in their summer residence, located in a suburb of St. Louis. The architects were commissioned to design a swimming pool and a pavilion containing dressing and entertaining facilities. The site is northwest from the owner's house.

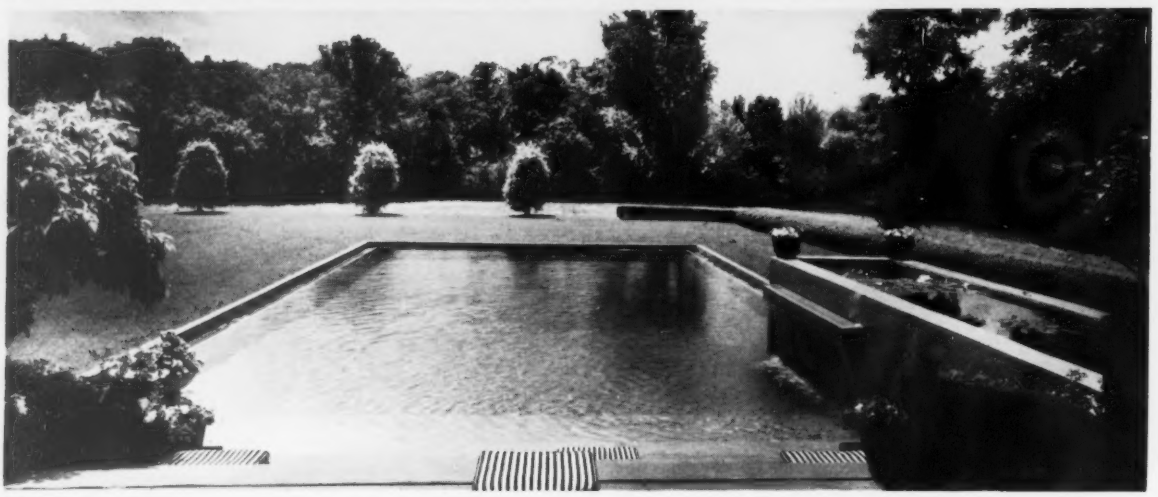
The building is supported by a steel frame. Roofs are 2″x6″ joists and the lower roof is hung by 1″ diameter bars from the steel frame.

The architects comment on the landscaping: "The ten-acre site was a sloping meadow dropping off to the south, completely framed by deep and undisturbed woods. The approaching drive winds upward through the woods emerging in the open at the high extremity of the meadow. We excavated at this point and created a shelf or plateau rather formal in shape. The pavilion and pool were then laid out on this created setting. Formal but not symmetrical planting became a part of the plan—the pavilion overlooking the pool and manicured-grass-area surrounding it. Beyond this artificial mesa, the meadow remains untouched. To begin with, the building site was treeless—in a way, a fortunate circumstance, as we felt free to install large trees where they would provide necessary shade and framing for the compound.

"The owner's collection of sculpture has enriched and enlivened the landscaping. The splash of the waterfall spilling out of the reflected pool into the swimming pool similarly lends visual, as well as audible, animation to the setting. The serpentine row of malus floribunda (flowering crab) opens the spring season with its usual enthusiastic display. Climbing roses on the serpentine fence behind the crabs flower next. Whereas the skeleton of the planting is evergreen (yews, euonymus, holly, and magnolia grandoflora), we have used a great many deciduous trees and shrubberies to yield color and contrast."



The site was created by raising a plateau out of an existing treeless meadow which sloped gently to the south.



CRITIQUE

James C. Rose: I find a kind of Shangri-La appeal to this design—something for the client who has everything. It is "beautiful," and I couldn't disagree with it more.

It has an assembled beauty. The ingredients are: a strong Wright influence, a dash of Le Petit Trianon, the insistent flavor of the client, a bit of old England in the rich garnishings of the landscape. With all this, it lacks something—like a mannequin displaying eclectic finery.

It has "everything"—except the minor miracle of creation.

Karl Linn: The architects were enthusiastic, "welcomed" the lack of natural trees on the site. They felt that this made the trees which they planted more important, since they could plant the terrace as they desired. This approach could not be further from good organic design. As a consequence, their trees stand out conspicuously in space rather than relating to the surrounding woods.

Also, the bushes are stiff and straggly. Though these were planted for their display of color, there is very little attention paid to the structure of branch formations. Since color in plants lasts only a short time, during the majority of the year these plants are offensive, detracting by their undistinguished structure. One cannot rely on color sequence as a substitute for definition of open space.

Instead of dealing with a sequence of open spaces with transition areas from natural to man-made, the design is pretentious and pompous, without subtlety. Not really a work of landscape architecture at all, its intent is to decorate with plants and to provide formal ornaments.

By the way, I hope that no one walks down the steps into the pool. They seem not clearly differentiated from those leading down from the terrace.

Lawrence Halprin: This garden with its swimming pool and pavilion seems not to have ended up true to its own essential qualities. Basically an elegant structure (à Le Petit Trianon), its formalistic qualities seem to have been marred and demeaned by the lack of simplicity and serenity. It seems scattered at the edges and cluttered where it should have remained clear.

The pavilion itself is elegant and simple and appears well sited, in its tree surround, at the top of the plateau. But there it ends—it is almost as if the garden had been done with another hand, unsympathetic to the first. The terrace seems too small and out of scale, crowded and overcluttered, and the furniture, pots, and dibbles of planting, seem unrelated afterthoughts.

The pool proportion has strength but it is weakened in its impact by the completely arbitrary and fussy waterfall and raised lily pool at its edge which nibbles into what should have been a serene outlook. The view south across the pool, in turn, is marred by the tree punctuation points which seem momentarily to be going to walk away in one direction or the other.

Where the sculpture has been brought in, it seems casually, often carelessly placed and not well integrated with the rest of the scheme.

Simplicity, started here with the pavilion, would have remained a virtue; the pool set in a carpet of green lawn, unattached by complex details, would have been more handsome, and the scale and proportions of outdoor spaces would have been enhanced by less fussiness and more clarity.

SUBURBAN HOUSE

"... the whole is not more than the sum of the parts ..."

Photo: Ezra Stoller

BALTIMORE, MARYLAND
JAMES C. ROSE, DESIGNER
LANDSCAPE ARCHITECT

This project is unusual for the approach taken to the solution of a difficult set of problems. The site, 1½ acres in suburban Baltimore, is on a heavily wooded slope, dropping 50 feet in 200. A typical residential neighborhood surrounds the property and a main traffic artery runs along the downhill side. The clients wanted to build a house approximately 5000 square feet in area, yet preserve the character of the land, saving as many of the tall oaks and beeches as possible.

To accommodate the house and its adjacent terraces on one level it was necessary to reshape a considerable part of the site. Rose was able, nevertheless, to preserve almost all of the trees not within the area of the house (without a single tree well). He developed a series of terraces at the levels of the existing trees, supported by retaining walls of wooden ties. Considerable freedom was possible in ground modeling, since the client-contractor was able to provide adequate earth-moving equipment and operators at any time. The landscaping was substantially completed before building construction began.

The house was conceived as "simply another level in the remade landscape." The central courtyard, or *atrium*, furthers this concept. In his *Creative Gardens* (Reinhold, 1958) Rose says, "the atrium, brought into the center, brings with it a sense of the landscape continuing through the house, and the interior passageways, bordering the atrium on two sides, directly communicate with the outdoors." The interior spaces are disposed around the atrium in three distinct blocks—living area and parents' suite; playroom and childrens' rooms; service and servants' rooms—all communicating with each other and with the outdoors. Although they are interrelated they are "defined enough, architecturally, to break the enormity of the house as it sits on the land."

The pool has been fitted into the existing contours of the site, its bottom following the grade. A "moat" of planting separates it from surrounding terraces, diminishing the accident hazard.

The house from the approach drive; wood-tie retaining walls support the terraces.

"Bayou-like atrium" brings the landscape into the house.

Garden terraces adjoin the dining space.

Atrium can be drained for use as a patio.

Photos (below and acrosspage): Ezra Stoller and Lonnie Wasco

All rooms communicate with outdoor spaces: kitchen opens onto atrium; children's playroom has private yard. Dining space has tile brazier under indoor trellis; atrium can be screened from interior with sliding shoji. Henry Hebbeln collaborated on the interior details and furnishings.

CRITIQUE

James C. Rose: I have only two comments to make, and these are comments on comments others have made and which I find only more irritating because they are intended, at least, to be pleasant, possibly complimentary:

"It shows what you can do if you have the money. . . ." I hope this shows a few things that can be done in spite of it.

"Why, it's like being set down in the middle of Japan. . . ." Which end up? I wouldn't know; I've never been there.

Karl Linn: Rose has worked out his design approach after painstaking deliberation. In this style, he attempts to capture the basic dynamic of interacting natural physical energy systems. His model, which he describes in his book, is the interaction of water systems with the resisting forces of the environment of earth and rock. The resultant pattern inspires him to stylize organic rhythms, particularly through his use of certain constant acute and obtuse angles. This is Rose's trademark, as it were.

In this project, he had an opportunity to indulge in his imaginative juxtaposition of the rectilinear geometry of the building and his tangential and diagonal outlines of planting beds. The subtle interplay of angles and levels of terraces is challenging and provocative. But because they are repeated abundantly, mechanical vibrancy is introduced with no relief. The spatial tensions established are too similar in intensity to create a pulsating rhythm, a staccato and legato. There seems to be no hierarchy of order, no sense of centrality radiating outwards, no interlocking of the rectilinear geometry of man-made architecture with the freer dynamic of the natural landscape.

Extreme tensions are set up in close proximity to the building, and severe restraint is exercised at the perimeter of the man-made landscape. The plastic potential of the soil is severely confined, restrained through the acute angles which permit no free expression. The delicacy, casualness, and subtlety which characterize Rose's own residence seem to be missing here.

The over-all impression is that Rose uses his levels and outlines additively without progression. One does not feel that the whole is more than the sum of the parts.

While it is gratifying to landscape architects that Rose designed the house as well as the site, it is disquieting to know that "we somehow never got around to making detailed plans, and so had the fun of improvising the details on the site." While personal supervision is vitally important to landscape architecture, improvisation can be carried to an extreme at the expense of careful, detailed execution. I feel that this project illustrates this, particularly in the railroad-tie work.

Lawrence Halprin: This is a garden where process seems to have generated results and where shape (in Ben Shahn's terms) has evolved out of content. I like it, I consider it a fine garden, and I would like to analyze some specifics rather than the basic approach.

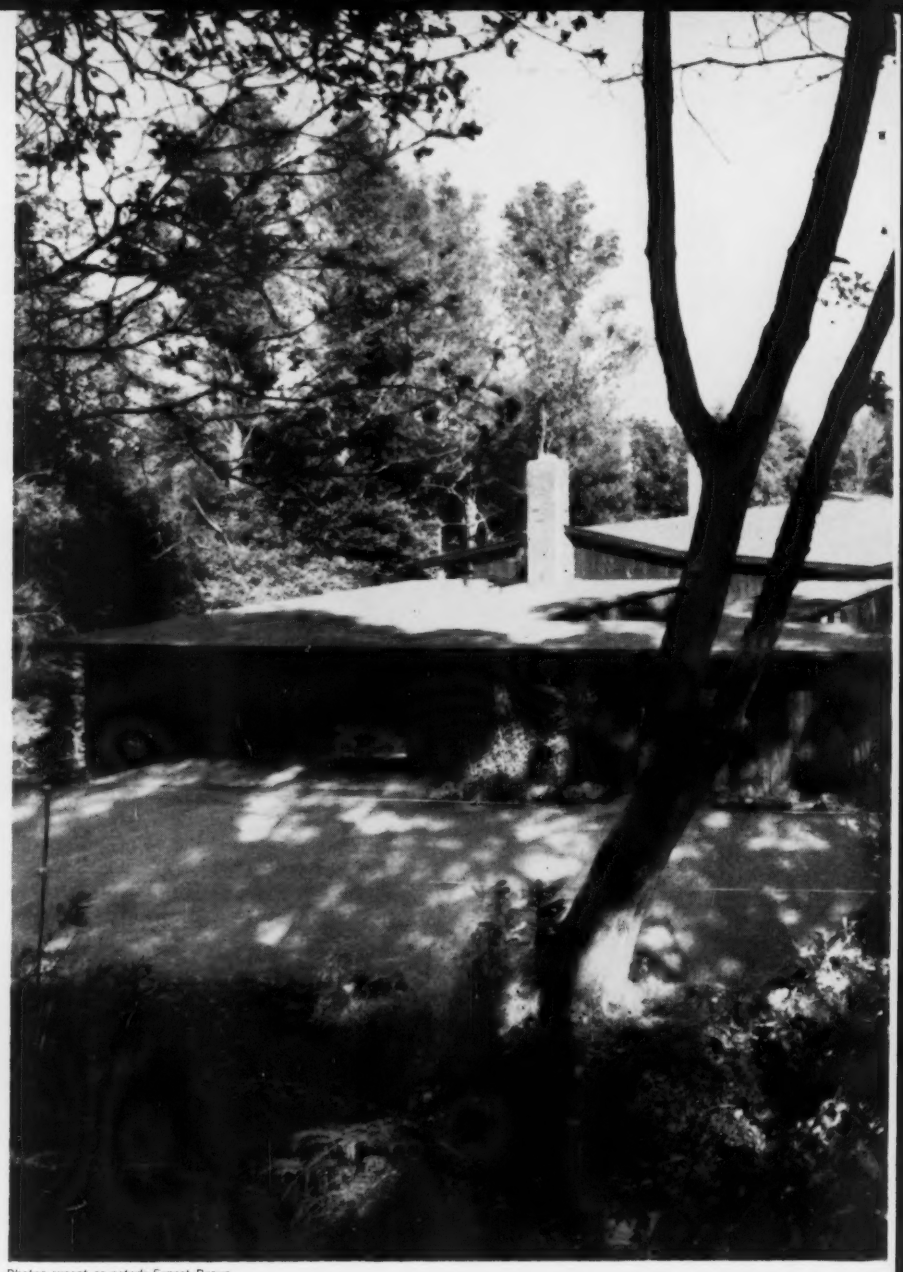
Certain things inevitably are troublesome. The continued and insistent crystallography of the jagged shapes, repeated once too often, I find at times overly dominant and demanding. There are times, too, as I visualize walking through this landscape, that the rough wood ties seem inappropriate and repetitious, particularly where they are stacked up too high and seem to barely hang on at their juncture with the main building masonry wall. These seem most successfully used when they are low and form planar steps rising steplike from the basic level. Where they support the sculptured rock forms they seem all wrong—the rock "feels" heavy, denser, more gravitational and seems inappropriately poised on or overhanging the "lighter" wood. I feel similarly about the swimming pool whose watery weight poised on the edge of this wood cribbing gives me an uncertain feeling, as though the dam might collapse.

But the interior court is a delight; the relation of the black trunks of the trees against the bright background is handsome and satisfying, and I am sure that the sounds of the water which I hear in my mind's ear make pleasant music.

Photos acrosspage: Herbert M. Rosenthal

VACATION HOUSE

"... please, Mr. Halprin,
no more of those
little pin cushions ..."



Photos except as noted: Ernest Braun

KENTFIELD, CALIFORNIA
WURSTER, BERNARDI & EMMONS
ARCHITECTS
LAWRENCE HALPRIN
LANDSCAPE ARCHITECT

This country house was designed as a weekend and vacation retreat for a couple whose children are away at college. The site is on a knoll which affords generous views of Mount Tamalpais, nearby to the south, and of San Francisco Bay, far to the southeast. Wooded areas shelter the site on the north and west; treetops frame the south views.

The principal rooms of the house are arranged in a long wing running along the north side of the site at the top of the rise. The main living space is divided almost equally between the living room and the kitchen-dining room, which is designed for informal entertaining. Both rooms open onto a wooden deck to the north and a large covered porch to the south. The porch provides access from the entrance court and offers a sheltered place from which to enjoy the views. At the east end of this wing is the owners' suite, with its wooden deck a few steps above the main porch.

Accommodations for children home on vacation, or overnight guests, are provided in a separate wing to the southwest, connected to the house by a covered walk. Facilities for preparing breakfast or snacks are located between the two sleeping suites. Both rooms open onto the private porch to the south.

The house is of wood-frame construction. Exterior walls are of resawn redwood boards; interior walls, T-and-G hemlock; floors, concrete with integral color hardener; ceilings, gypsum board. Steel sliding doors open all major rooms to the landscape. Heating is with gas-

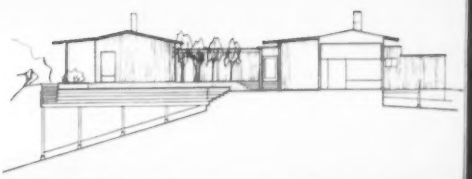
fired radiant floor panels.

On the south slope of the knoll, Lawrence Halprin has developed an arrangement of terraces which combine with the porches of the house to form an outdoor room. The house itself forms two sides of this room, the wooded slopes of the mountain seem to enclose it on the third, and on the fourth side the view extends to the Bay and beyond.

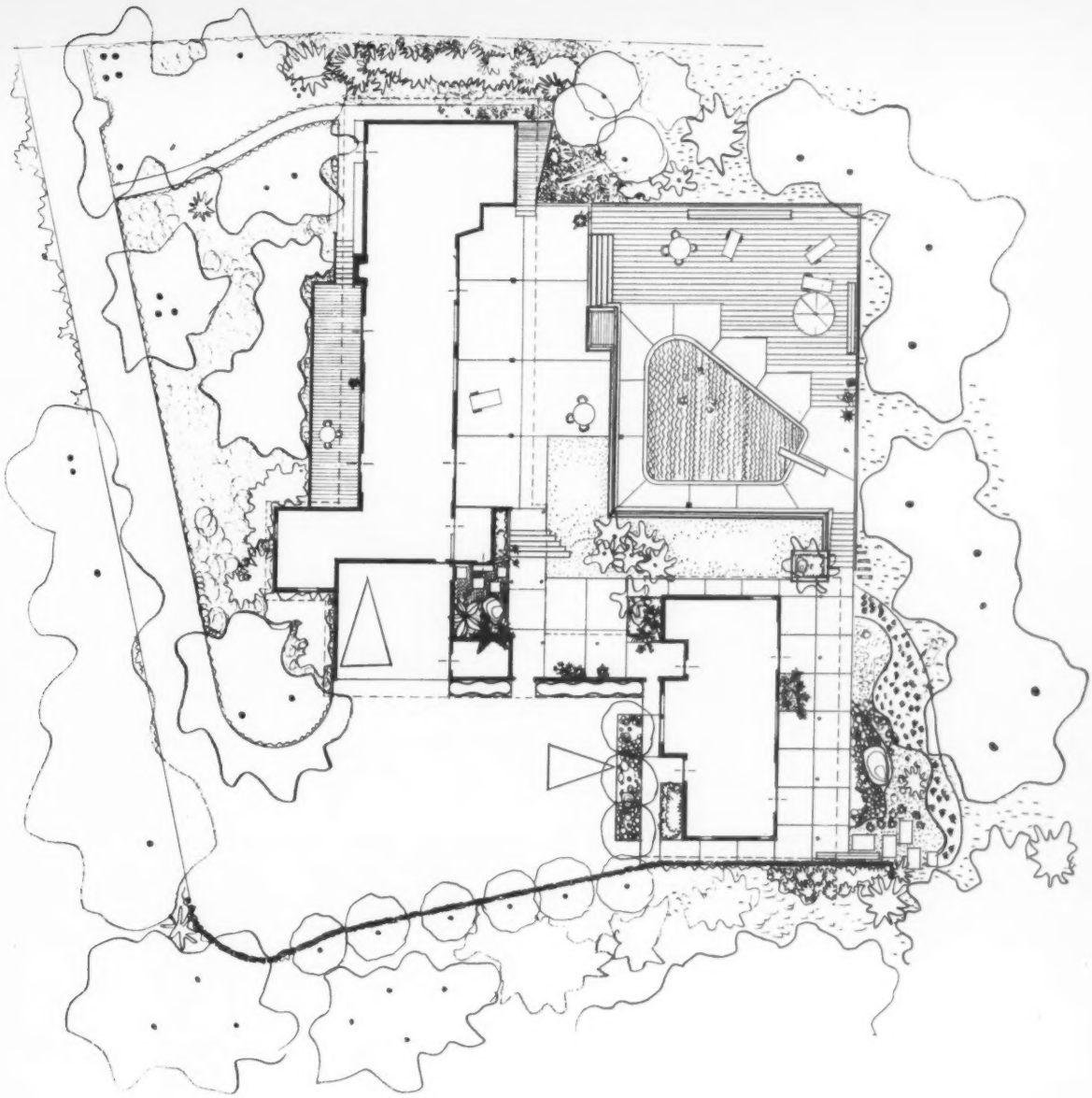
The upper terrace is an extension of the porches and covered walks of the house. This level includes a planted area near the guest wing, the feature of which is the grove of birches just inside the main entrance. Nearby, sheltered behind the covered walk, is a garden pocket.

The lower terrace is a level rectangle embraced within the L of the upper terrace. It comprises a pool and its concrete deck, and a wood deck which extends out from this toward the treetops of the lower slope.

Much of the site has been preserved in its natural state; aside from the terraces and pool, only areas immediately adjacent to the house were landscaped. Near the guest wing a small garden has been developed as a transition between the porch and the natural slope beyond.



The House: *Occupying the top of a wooded knoll, the rambling one-story structure is planned to provide a level garden area to the south; covered walks link the main house, guest house, and entrance; sheltered porches face views of mountain and bay.*

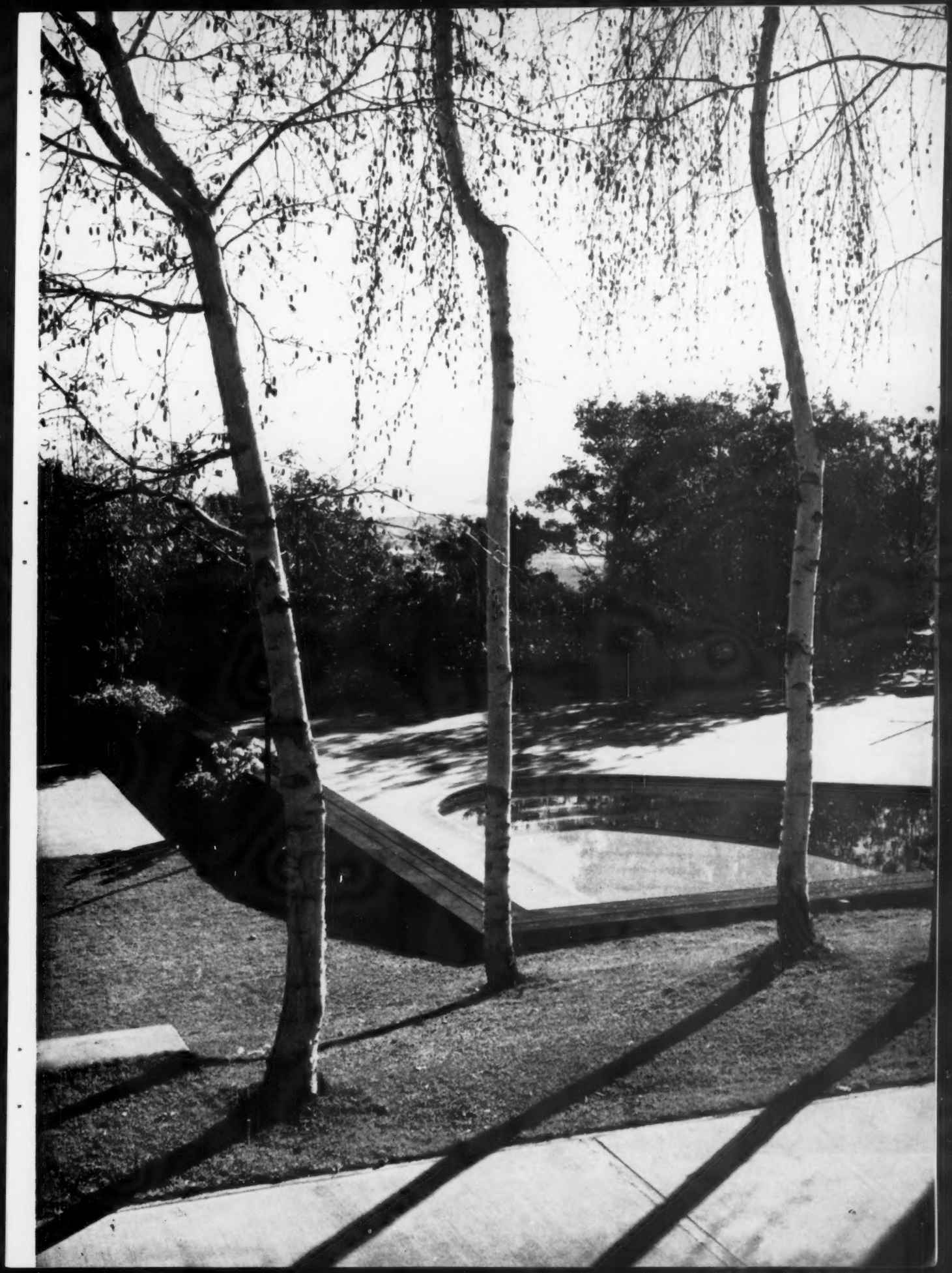


The Landscape: *To the south of the house a series of terraces extend from the porches down to the pool deck, which reaches out into the treetops; except for garden pockets near the house, the site has been left largely undisturbed.*

Photo: Lawrence Halprin

A grove of birches is carefully placed to frame views of Mount Tamalpais and the distant Bay. Wood retaining walls and wood deck surround the pool. The covered porch offers a protected place to enjoy the view, even on cool days.

Photos (left and acrosspage): Lawrence Halprin



Guest house opens on garden; deck overlooks terraces.

Small garden beside covered walk provides interest at entrance.

CRITIQUE

Lawrence Halprin: The site is at the end of a long steep drive on the top of a knoll overlooking the north face of Mount Tamalpais. This is a vacation house used during the summer and weekends and maintenance therefore had to be kept to an absolute minimum. The reason for the house was "to be in the country, to be out-of-doors and enjoy the forest." Our solution, therefore, was to avoid extensive landscaping and to construct instead garden terraces at different levels in the native woods.

The house cups the garden. One enters on the upper level from the parking area, through a glass door in the wall, into a covered porch which is low and protective. Ahead, a group of seven white birches stands on the lawn. Their white trunks act as a partial visual screen for the rest of the garden. As one moves forward down the broad steps between the birch trees, the garden terrace decks appear. Once on the main terrace, the view of the mountain unfolds to the south, seen between the red-brown trunks of madrona trees. The swimming pool is at a still lower level, in the protected sun pocket formed by a low wood retaining wall. A wood deck floats the pool level out into the tops of the forest trees. There is only one planted garden, which adjoins the guest house. In this a carpet of mosses and tufted grasses and stones is interwoven with the native bracken fern and sage—garden merging with nature.

James C. Rose: In spite of the beautiful scenery in the distance, I regret to say that this landscape adds up to less than enchantment for me. The personal pronoun is strong enough, but it is a question of whether it is as interesting as what it covers up.

Some of the apparent barrenness will undoubtedly be overcome in time by the planting and its growth, but wouldn't it have been better to retain some of the natural vegetation and contour? On the other hand, I see no real objection to clearing and reworking the site completely if a more interesting form evolves.

But please, Mr. Halprin, no more of those little pin cushions in the landscape.

Karl Linn: In this project I somehow miss Halprin's sense of nuance and subtlety; perhaps it is because I am not familiar with the prevailing circumstances.

The progression of terraces and decks descending away from the building offers no relief and evokes a sense of instability and insecurity—so far as one can judge from the pictorial material. Kinetically speaking, the deck pushes against the surrounding trees rather than being framed by them. Since the building is on a slope exposed to magnificent views, one feels almost thrown out into the air without a sense of enclosure; open space does not seem to be enveloped.

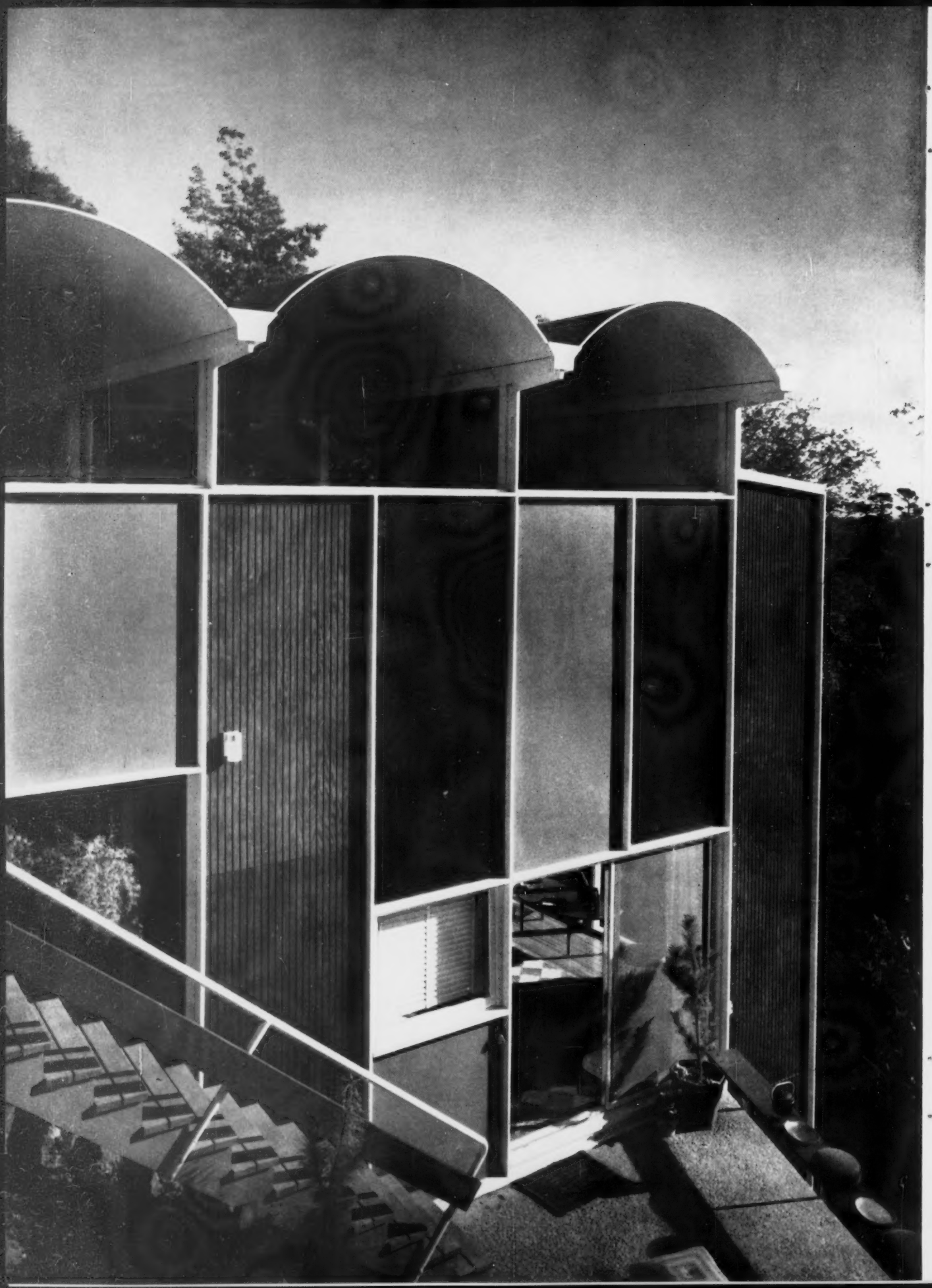
There is a lack of strong plant material within the built-up area to soften the massive walls and rigid concrete surfaces. Even the zig-zags joining the decks with the concrete paths around the pool do not give relief but look rather self-conscious.

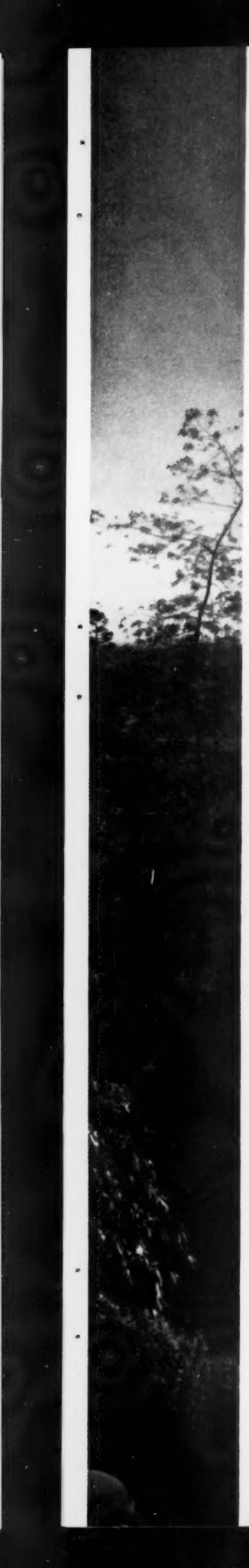
The tufted grasses with their bristling brush-like qualities remind one of desert vegetation and do not relate to the lush softness of the existing woods. They create an effective panel because of the contrast, but are they justified?

Despite the fact that on the plan the large, square, concrete, stepping stones seem to fit harmoniously—loosening the solid pavement of the deck and losing it in the landscape—the detail of these stones in relation to the moss and natural stone retaining wall seems out of place and out of scale.

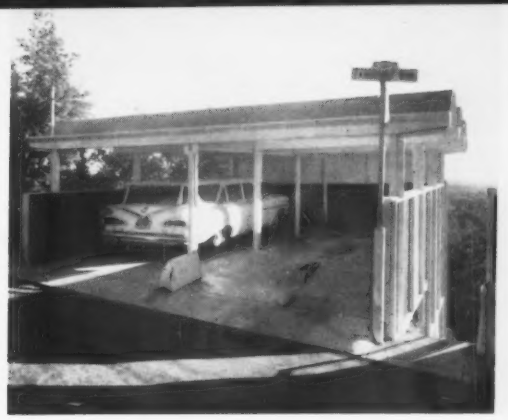
In general, I could not detect a real interpenetration of natural and man-made landscape.

I think this project illustrates the result of the basic dichotomy in the work of landscape architects; i.e., if one tries to respect the expressive qualities of nature within which one works, he feels limited in his own desire to give form. After respecting existing natural conditions without an attempt to imitate nature but to relate to her respectfully, the artist often asks himself, "Where am I in my work?" This frustration leads often to a desire, even a need, to exert oneself—at times at the expense of a harmonious relationship with existing conditions. It is a danger inherent in the art.



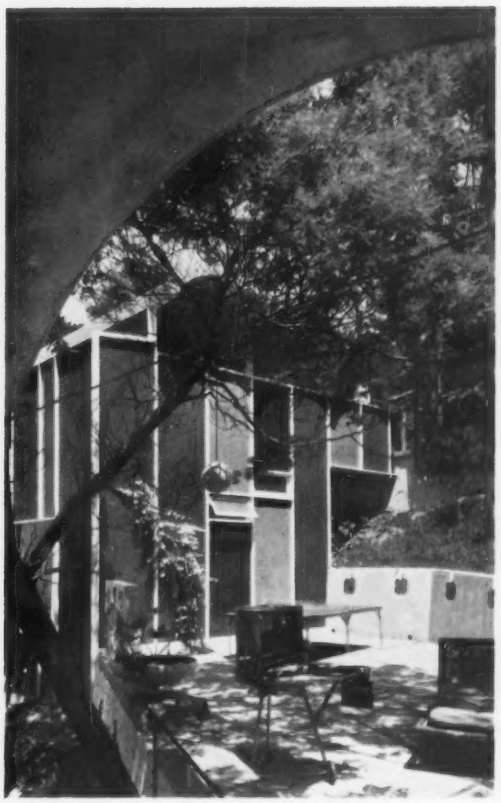


"... plunked down, fluttering, poorly anchored ..."



BACHELOR'S COTTAGE

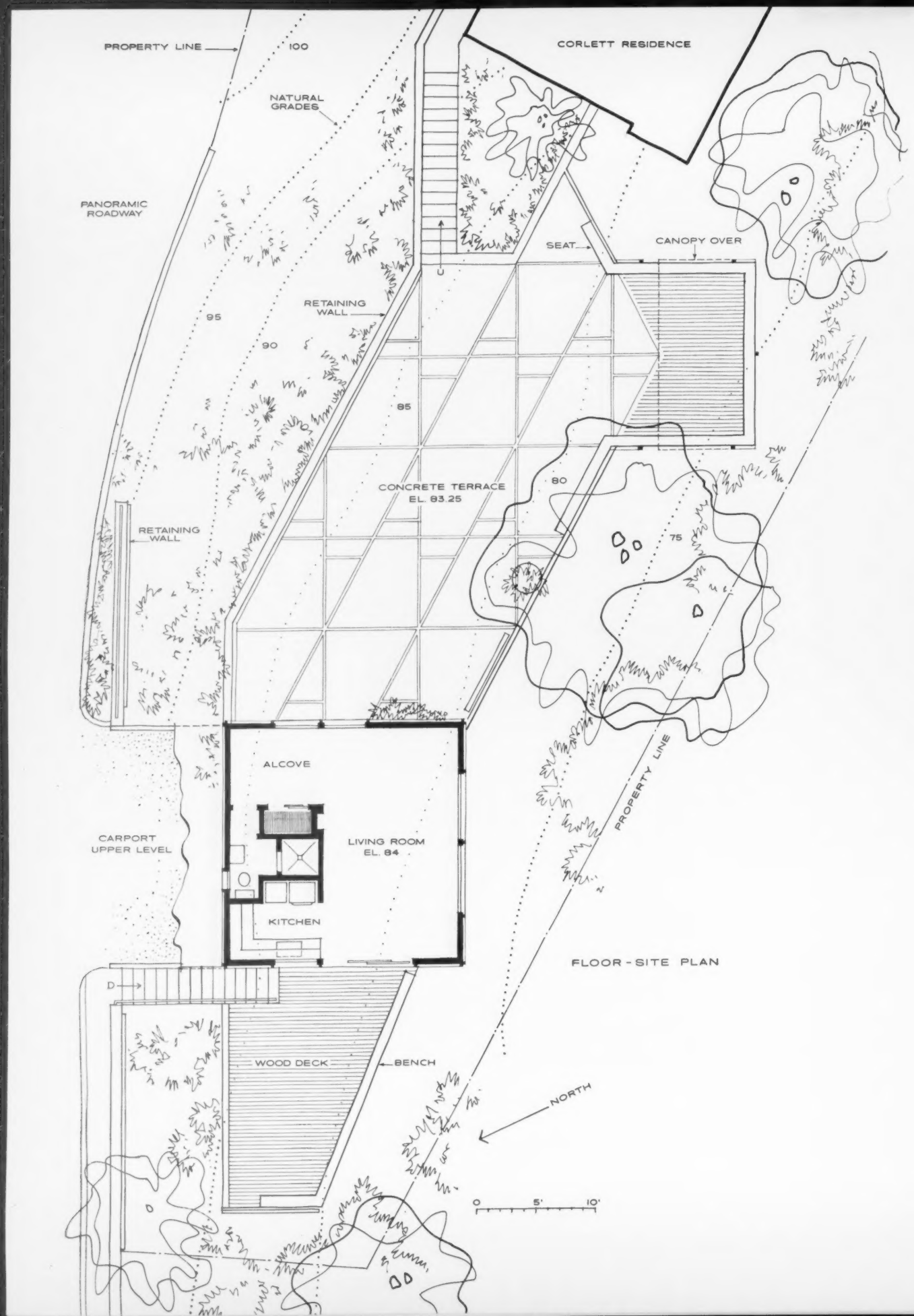
BERKELEY, CALIFORNIA
CORLETT & SPACKMAN
ARCHITECTS



Photos: Phil Palmer

Next to Corlett's own house was a steep, narrow piece of land used as a neighborhood dumping ground. Since the Corletts needed an outdoor living area and guest parking space, they decided to develop this property and, in addition, include a small apartment. The parking deck for four cars is roofed with preformed ⅝"-plywood vaults, each section spanning 8′ x 24′. The space underneath the deck is used for a 20′ x 20′ apartment with 11-ft-high ceiling. As a precaution against slide conditions, the foundations are piers and grade beams. The terraces are of exposed-aggregate concrete with glass-mosaic scraps seeded into the surface. The vaults of the adjacent terrace "tea house" are suspended from an A-frame made of 4″ x 4″s (see SELECTED DETAIL, page 194). The architect reports that "the threatened dullness of rectangular plan and resultant boxiness was nicely overcome through the use of plywood vaults whose cost, including roof surfacing, was more economical than any conventional pitched- or flat-roof treatment." Total cost of the building was $11.20 per sq ft.

The architects comment on the landscaping: "Landscaping of the 45° slope essentially amounted to erosion control. Therefore, we used ice plant on all slopes above and below the building and its concrete terraces. The ice-plant ground cover, besides its ideal erosion-control characteristics, presents a year-round textured appearance virtually free of maintenance. Privacy from the street above was accomplished by the planting of an acacia screen. Both terraces provide a view of the San Francisco Bay area to the west through existing acacia trees."


PROPERTY LINE
100
NATURAL GRADES
CORLETT RESIDENCE
PANORAMIC ROADWAY
SEAT
CANOPY OVER
RETAINING WALL
95
90
85
80
75
CONCRETE TERRACE EL. 83.25
RETAINING WALL
ALCOVE
CARPORT UPPER LEVEL
LIVING ROOM EL. 84
KITCHEN
PROPERTY LINE
FLOOR - SITE PLAN
WOOD DECK
BENCH
NORTH
0
5'
10'

CRITIQUE

James C. Rose: It is pleasant to see architects not taking themselves too seriously. This certainly is a carefree project, and undoubtedly provides pleasant living quarters due to the natural surroundings.

By constrast, the structure seems contrived rather than inevitable. I do not see that the landscape gimmicks contribute anything or improve upon the original site.

Karl Linn: It is difficult to form an impression from the photographs of how these highly sophisticated buildings relate to their man-made and natural site. I wonder how well related the vaults of the roof are to the Mondrian-like rectilinear-panel walls. Even the vaults hanging from wooden frames over the deck of the little patio stick out prominently into space, giving the impression of art for art's sake. In general, I get no impression of definition in open space.

Again, man's relation to the automobile seems to me oppressively represented as Damocles' sword.

Lawrence Halprin: This long, thin, benched-out space is dominated, even overwhelmed, by the house at its north end and the steep cut bank and retaining wall on the east. These seem, in effect, unrelated to the site.

The house is plunked down, fluttering and poorly anchored, and its relation outward to the terrace and westward to the view not wholly solved. I get the feeling that the corners do not all exactly touch and that this is not truly a house designed for a hillside or this particular hillside.

I am disturbed here, as in one of the other projects, by the materials and colors. The plywood wall panels in alternating colors, the striated siding, the yellow soffits, all seem to be demanding unnecessary attention. I wonder whether this dramatic and lovely site could not have welcomed softer, less insistent, surface treatment and the box left to speak for itself instead of being pushed and shoved for "interest."

I feel the same way about the floating vaults over the wood deck. The deck itself is lovely, very successful, and nicely tucked into the existing grove of trees whose dappled canopy of leaves and shimmering quality are very beautiful. I wonder why the plywood vaults are intruding (except as a gimmick) and I resent them in this fine setting.

PIEDMONT, CALIFORNIA
CLARENCE W. MAYHEW, ARCHITECT
H. L. THIEDERMAN
ASSOCIATE ARCHITECT
GERALDINE KNIGHT SCOTT
LANDSCAPE ARCHITECT

ENTRANCE TREATMENT

An inviting entrance *(left)* with three different planting treatments—in boxes, in a pool, and recessed in the floor—was evolved to lead from outside to inside this house. Though the planting varies, both the outer and inner vestibules are united by continuous cedar siding, gold-plaster ceiling, and gray-green slate flooring.

The outer vestibule establishes an Oriental mood with an antique Japanese black pine, from the 1915 San Francisco Fair, and a carved stone lantern, imported from Japan *(acrosspage)*. The lantern and water plant (equisetum or "horsetail") are set in a tiled pool bridged by a redwood walk. The bridge conceals a pump, to create movement of the water, and also lighting which appears reflected from the water itself.

Planting in the inner vestibule *(below left)* is recessed in the slate floor the soil for the miniature philodendron and palms is covered with white, graded, quartzlike river gravel.

Photos: Morley Baer

DATA: descriptions and sources of the major materials and furnishings shown.

CABINETWORK, SCREENS
Cabinetwork: natural teak/custom-made. **Sliding Screens:** natural cedar/Japanese rice paper/custom-made.

DOOR, WINDOWS
Door: sugar pine sash/painted dark plum. **Windows:** wood stops painted dark plum; glass/Libbey-Owens-Ford Glass Co., Toledo 3, Ohio.

LIGHTING
Outdoor Pool: concealed along edges of redwood bridge. **Wall-Hung Fixture:** copper/custom-made/ Boyd Lighting Fixture Co., 56 12 St., San Francisco, Calif.

WALLS, CEILING, FLOORING
Walls: red cedar siding/1"x6"/V joint/millwork; natural color clear lacquer/E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del. **Ceiling:** light gold plaster/California Stucco Co., 1850 E 25 St., Los Angeles, Calif. **Flooring:** tones of gray green slate, gray joints/Vermont Structural Slate Co., Inc., Fair Haven, Vt. **Bridge:** dark redwood. **Pool:** gray green tile/ imported from Italy.

ACCESSORIES
Sculpture: stone lantern/gold and red lacquer bas relief/imported from Japan. Plant Box: redwood/ custom-made.

Union Carbide Building: 52 stories.

STAINLESS STEEL FLASHING

BY RICHARD E. PARET

This author, a stainless-steel specialist, speaks for the Committee of Stainless-Steel Producers of the American Iron and Steel Institute, New York, N.Y. To illustrate the attributes of this metal for flashing, Paret has selected installations in three of New York's most recent skyscrapers.

Stainless steel, used in the past for a variety of structural and decorative purposes, is now finding increasing use as an undercover material. In several recently-built New York structures, it is extensively used as flashing for spandrel beams, roofs, parapets, and exterior columns.

There are major reasons for this employment of stainless steel. Its compatibility with other metals, concrete, limestone, and brick gives the architect unusual freedom in his selection of materials. Because it is chemically inert, stainless steel eliminates the problem of galvanic action that is present when dissimilar metals are used. Therefore, with no electrolytic reaction, corrosion—and the resultant unsightly staining of a metal façade—does not take place. In a stone or brick building, this property is also important. There is no significant chemical reaction between stainless steel and the lime in concrete, whereas other flashing materials tend to be corroded by lime.

Although this factor explains an architect's preference for stainless steel, there is an added advantage to the metal contractor. According to General Bronze, prime contractor for several office buildings that have used stainless-steel flashing, it is the only flashing material that can be soldered in light gages. With on-the-job soldering, mechanical joints are eliminated, and a continuous run of flashing securely weatherproofs the building.

The following examples show ways in which stainless steel has been employed as flashing in recent installations. (Other prominent structures using stainless steel, in addition to those discussed below, are a laboratory and a graduate-student residence hall at the Rockefeller Institute, designed by Harrison, Abramovitz & Harris; the Atlantic Building, designed by Voorhees, Walker, Smith, Smith & Haines; and the Equitable Life Assurance Building, designed by Skidmore, Owings & Merrill.)

Time & Life Building

For curtain-wall buildings, there are two popular installation techniques for flashing: reglet and surface attachment. For the new Time & Life Building, Harrison, Abramovitz & Harris specified one-piece reglet attachment for the more than 40,000 feet of 26-gage, Type 302 stainless-steel flashing that encircles the building. The installation is expected to last for the life of the structure, as repair and replacement on this type of building would obviously be prohibitive. In fact, base and counter flashings on the eighth-floor setback and the roof are actually buried in junctures where the roof deck meets the walls of parapets, bulkheads, and planting boxes. If ex-

tensive maintenance were required, these walls would have to be knocked down and completely rebuilt.

Chase-Manhattan Building

Here, too, the stainless-steel flashing provides a watertight protection that will last for the life of the building, but the flashing also serves to cut down wind noises. The architects—Skidmore, Owings & Merrill—incorporated a unique element into the design in the outside columns, and had to compensate for the sound of wind whistling through the metal-clad columns. Stainless-steel flashing around the columns on every fourth floor provides sound absorption and weatherproofing.

Cap flashing 3″ high is surface-attached to the bottom edge of each floor's spandrel beams by stainless-steel fasteners. (Any other fasteners would tend to shear when driven into concrete.) With interlocking base flashing attached to cap, the over-all depth of flashing is approximately 11″. This design is considered most practical in its easy conformity to the irregular profile of the concrete.

Specifications called for 30-gage, Type 302 stainless steel for the 800 feet of flashing on each of the 50 floors.

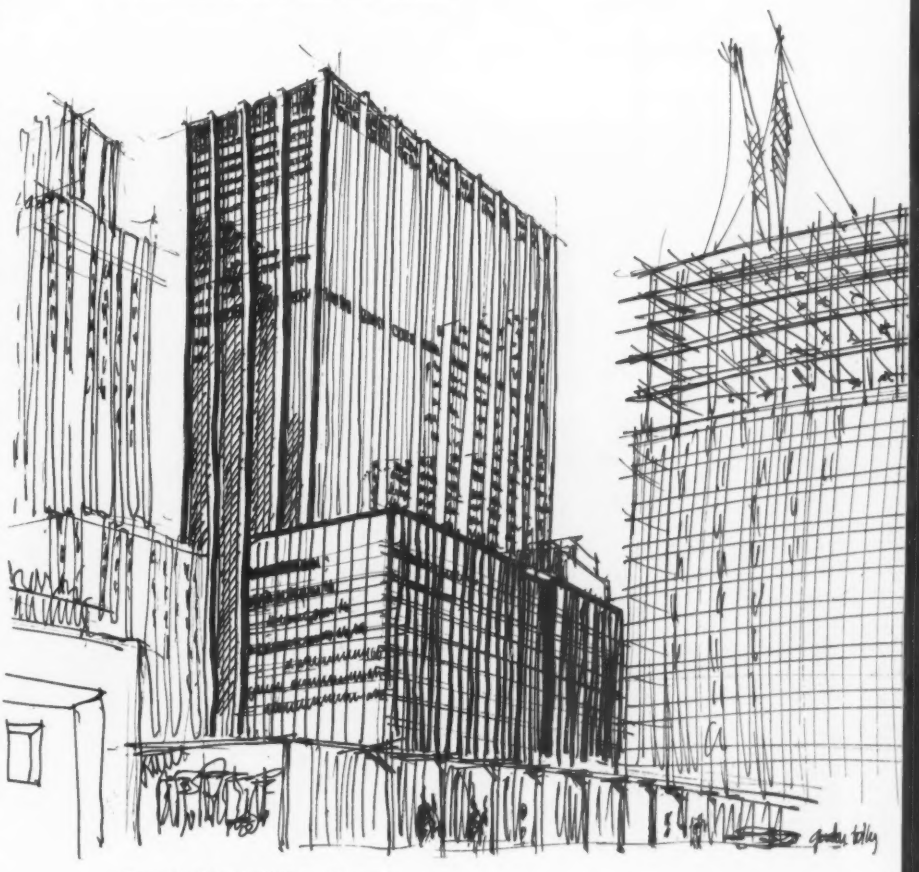
Union Carbide Building

Ordinarily, two-piece surface-attached flashing is set at a projection from the spandrel beam, and the projection is filled with a calking compound. In the case of Union Carbide's new building, Skidmore, Owings & Merrill designed a flashing that is set back on the beam and has a mullion cutout. Delivered in 5′-1½″ leigths, the flashing strips are centered behind the mullions, and seams are made watertight with soft solder.

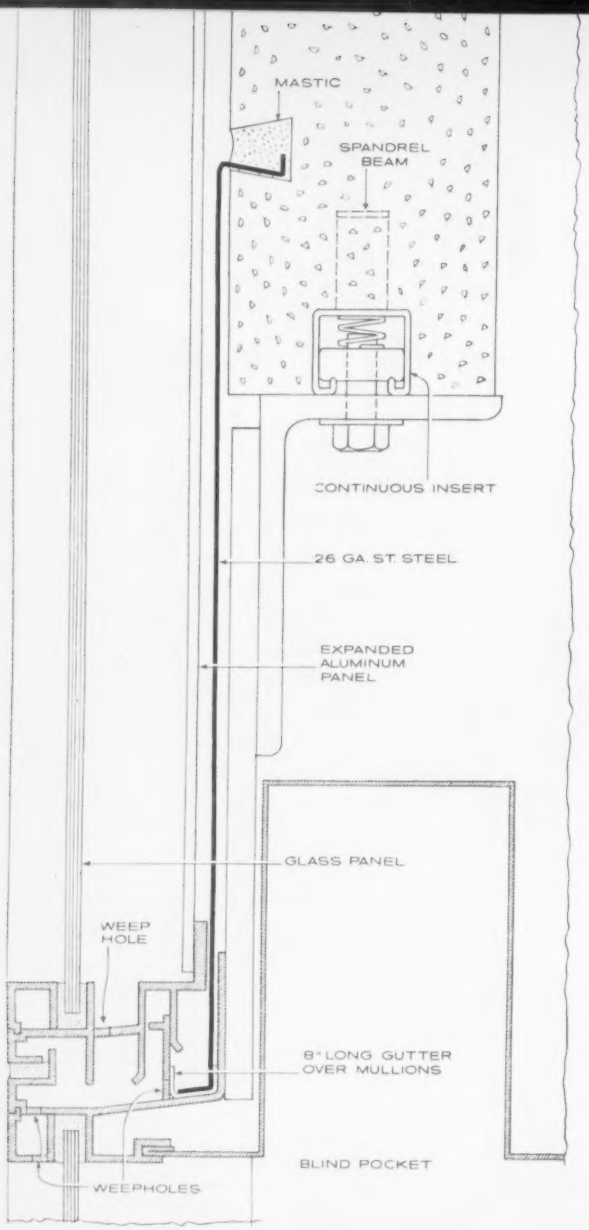
Approximately every 100′, 3″-wide interlock expansion joints permit vertical expansion between the façade and the building itself. (With curtain-wall construction, horizontal expansion problems are held to a minimum.) As an extra precaution against water condensation around nail holes, snap-on stainless covers drop over each fastener. The roofing contractor considers these snap-on covers the ultimate in protection. Any condensation that might form is let out through a series of weep holes that are staggered on the panels and panel frames.

As in all of these buildings where flashing was nailed, chemically inert stainless-steel fasteners were specified. Specifications for the 40,000 feet of flashing at Union Carbide called for 30-gage, Type 302 stainless steel.

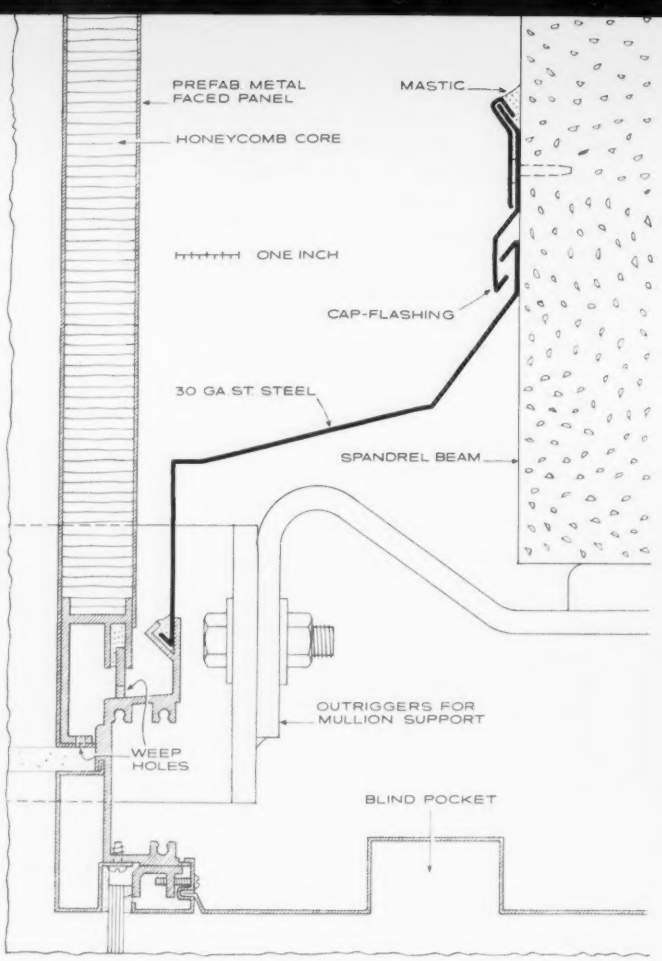
Chase-Manhattan Building: 50 stories.



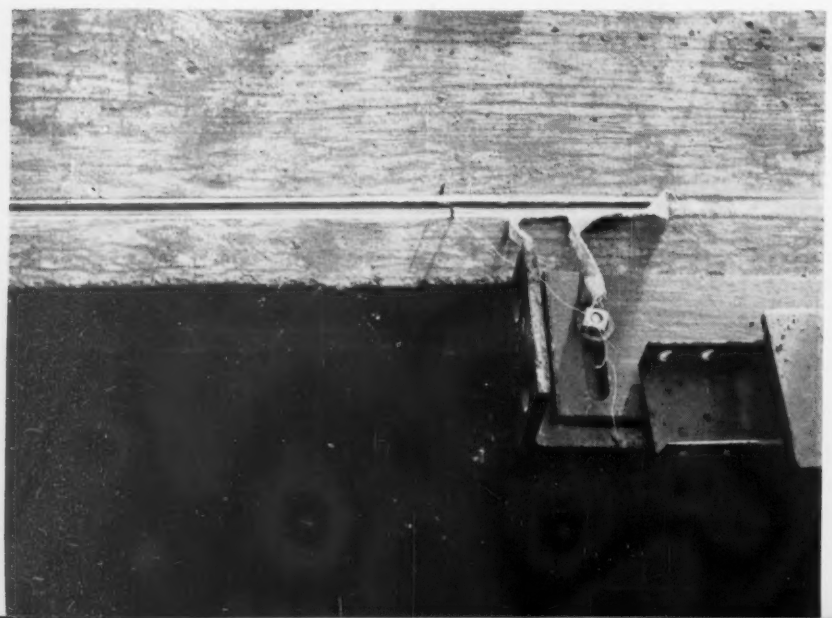
Time & Life Building: 48 stories.



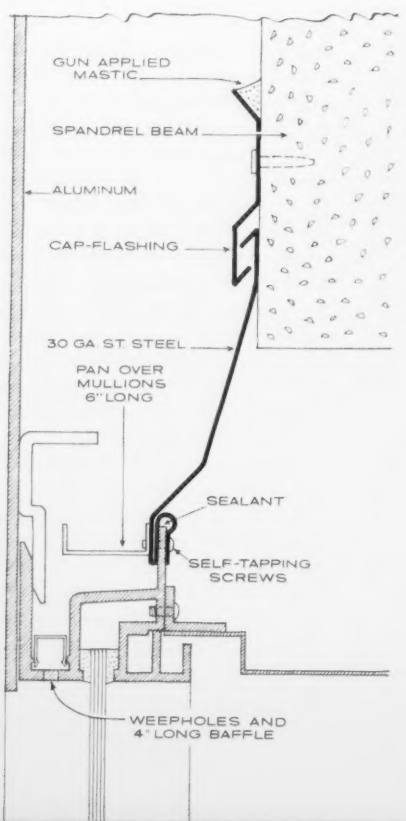
Dovetail strip on Time & Life Building is recessed about 5" from bottom of spandrel beam. Reglet-attached flashing is set into dovetail strip and wedged with lead rolls.

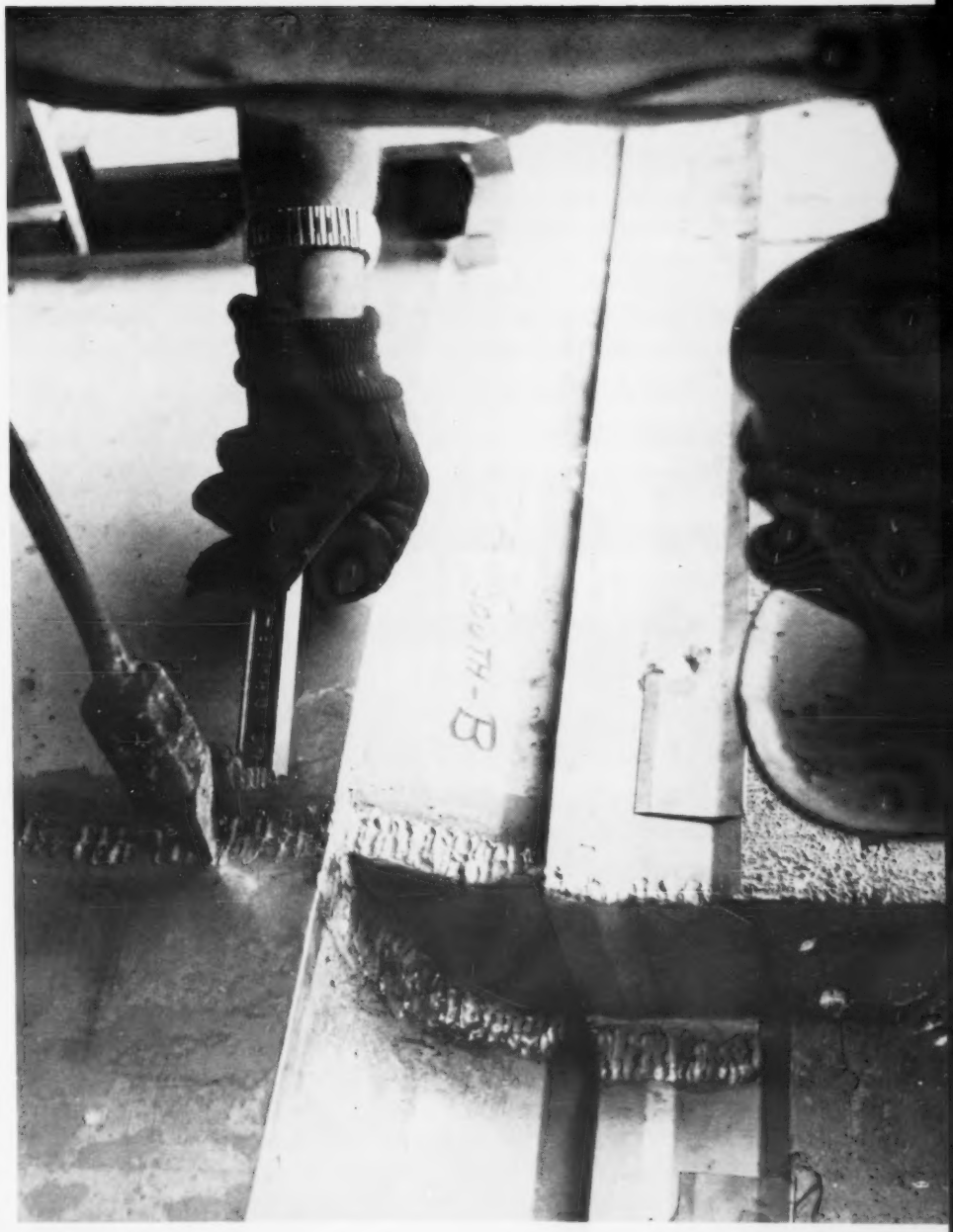


Cut-outs are closed with soft solder. On-the-job soldering at Union Carbide Building eliminates mechanical joints so that one continuous run of flashing weatherproofs the structure.



Three-in. deep cap flashing is positioned on bottom edge of spandrel beam behind mullions of Chase-Manhattan Building. Overall depth of flashing runs approximately 11".




SOUTH-B

EXTERIOR WOOD STAINS

BY JOHN N. ANDERSON

This article signals a trend to the use of stains—in both residential and commercial construction. Written by the Production Manager, Olympic Stained Products Company, Seattle, Washington, the discussion points out the development of improved stain products and analyzes the component materials of stains, their effectiveness as moisture barriers, heavy-bodied stains, and effects of special applications.

Some trends are whimsical, being apparently the product of casual interest. They do not have the stuff of permanence in them and are subject to abandonment as their novelty wears thin. Architecture, like all the arts, has its share of such temporary fads.

There is nothing temporary, however, about the expanding use of stain with the wood products that are especially suited to it. The trend is apparent in both residential and commercial construction; it is solidly grounded in proven advantages of economy of application, extreme durability, and broad adaptability to contemporary architectural design.

Architects have given tremendous impetus to the use of stain, particularly in ranch-rambler types of homes where rough-lumber siding suggests stain as the appropriate finish. Many commercial designs require similar finishing treatment.

Development of Improved Products

In hand with this impetus has gone continuing development of many new and improved manufactured stains. No longer are the architect and painter limited to materials having the consistency of thin soup. Heavy-bodied stains are now available that, in a single coat, will completely conceal the color of an older finish or the grain of the wood. Stains can be used well on either rough or smooth redwood and cedar surfaces. There are stains for clear interior or exterior finishes; there are others, known as penetrating stains, which show the grain of the wood while adding their own distinctive colors to the surface; and there are stains which give an opaque-white appearance virtually indistinguishable from paint.

An architect concerned with the finishing materials and appearance of a building should know the possibilities of different applications of stains. He will want to know whether a product such as heavy-bodied stain, a comparative newcomer in the finishing field, has satisfactory performance characteristics. He will want to know what kind of ingredients go into the best-quality stains. And he will want to know the advantages of the prestained products available today.

Component Materials of Stains

If, as maintained in this article, a stain can do virtually anything an exterior paint can do, a question naturally arises. What is the difference between a stain and a paint?

The difference is fundamental both to the type of materials and the action of the finish. In materials, the main difference is that paint uses a heavy-bodied oil that bonds to, but does not penetrate into, the wood. The oil is the "vehicle" of the product.

Stains use a lighter-bodied oil that does penetrate the wood. Best-quality stains use raw linseed oil. (Boiled linseed oil has larger molecules which inhibit penetration.) The heavy-bodied oils used in paints are a contributing factor to their higher cost; a good quality of exterior house paint inevitably costs more than the purest, best-quality stain.

Other ingredients besides the vehicle are the pigments and the driers. The driers evaporate, leaving only the vehicle and the pigments. In both paint and stain, materials are organic and become progressively harder with age.

Thanks to new chemical discoveries, it is no longer necessary for a stain manufacturer to use creosote in his product to prevent rot and fungus growth. Creosote has a tendency to "bleed" through a material applied over it when the owner desires to change the type of color of the finish. Now, a substance called phenyl-mercury-oleate does the job with no damage whatever to the appearance.

Effectiveness as Moisture Barrier

Because of the differences in their structures, the materials of paint and stain react in characteristic and sharply-differing ways when applied to wood. Good exterior paint forms a tough, weather-repellant shell, in effect a material completely separate from the wood. It is watertight and becomes harder and more brittle with age. Since stain penetrates beyond the surface, however, it becomes an integral part of the wood. It weatherproofs the surface just as effectively as paint.

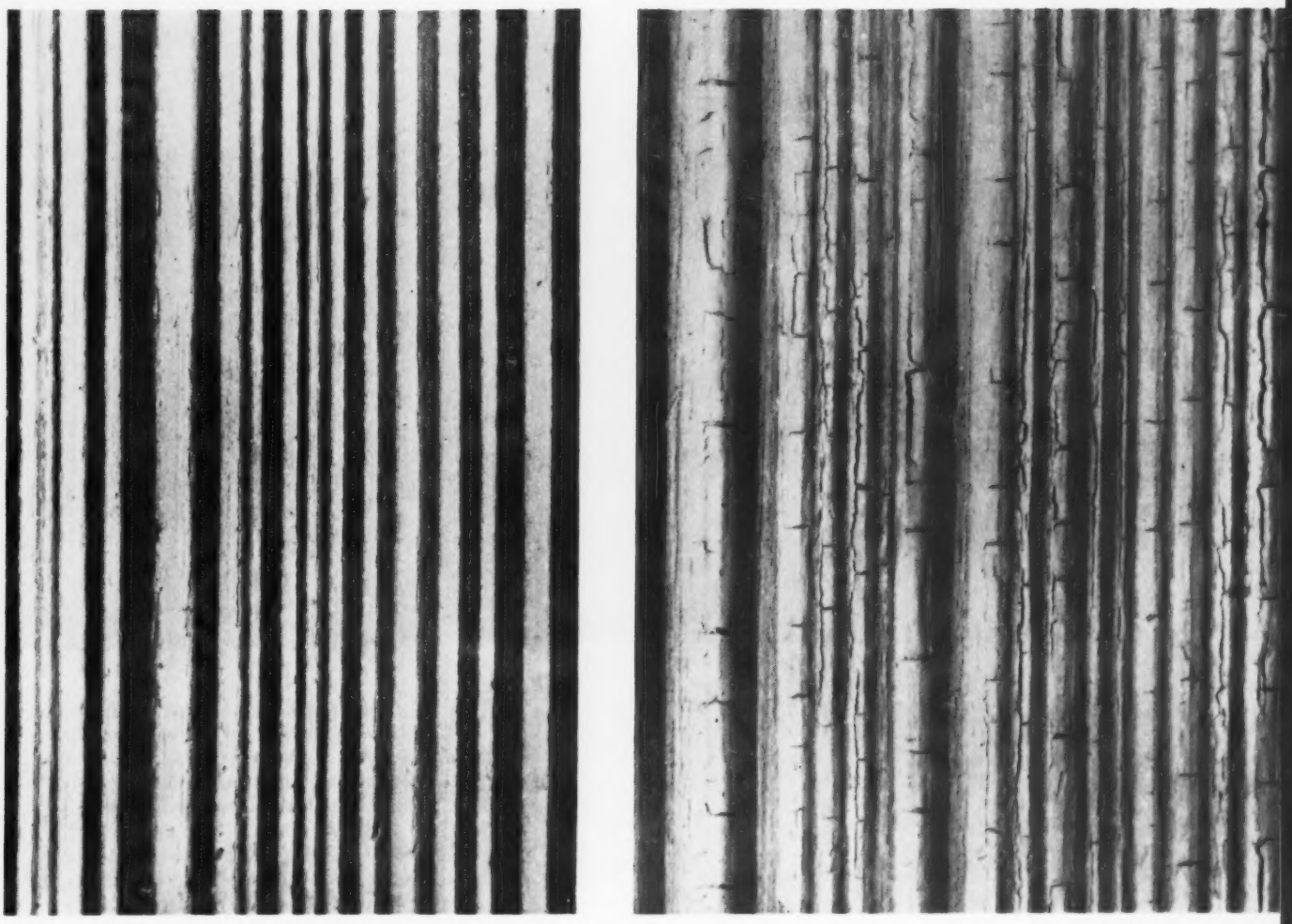
These characteristics are crucial. A moisture barrier is desirable in an exterior finish, yet it should not be absolutely moisture-proof. A characteristic of air-borne moisture is that it can pass easily through wood fibers. Therefore, in the winter, moisture from inside the house will penetrate through the wood to the inside of the paint barrier. There it will condense on the wood, sometimes causing decay. Or it may remain as condensed moisture underneath the paint until the first sunny day evaporates it, causing the familiar blisters. Another liability of a hard, non-resilient surface is its tendency to crack and peel, which occurs when the wood beneath it contracts and expands.

The building owner who uses factory-stained siding material gives his structure added protection at lower cost. Stain can be applied by the manufacturer by production-dipping methods at a lower cost than by applicator afterward. In addition, the siding materials are stained on all sides and edges, giving over-all protection against moisture coming through the wood from the inside.

Heavy-Bodied Stains

It was the use of heavy-bodied stains that precipitated the still-growing popularity of stains. These stains are made by increasing the proportions of pure earth pigments. Although this somewhat reduces the penetrating properties of the stain, there is still sufficient penetration for the stain to become an integral part of the wood.

It is important, though, that the stain use only pure pigments. Some of the cheaper varieties use extender pigments, which add nothing to the color, but only give the product an *appearance* of body. These extender pigments do not dissolve



Stain (left) *and shake paint* (right) *compared 18 months after start of weathering test made by Forest Products Laboratory. Latter shows considerable cracking and flaking. Stains use a lighter bodied oil—the best quality stains using a raw linseed oil.*

completely in the oil, with the result that they bleach and wash out at the first heavy rain, leaving unsightly white streaks on the surface of the building.

The only difference in appearance between a heavy-bodied stain and a paint is in its finish. A paint takes on a glossier surface. A paint type of finish can be approximated, however, when two coats of stain are used. Part of the oil of the second coat will not absorb into the wood, and a soft, egg-shell type of surface results.

Stains have a distinct advantage over paints since two applications of a heavy-bodied stain are always sufficient. The same stain, furthermore, can be used for both coats. (Three coats of paint are required for a satisfactory finish with new siding.)

Application Recommendations

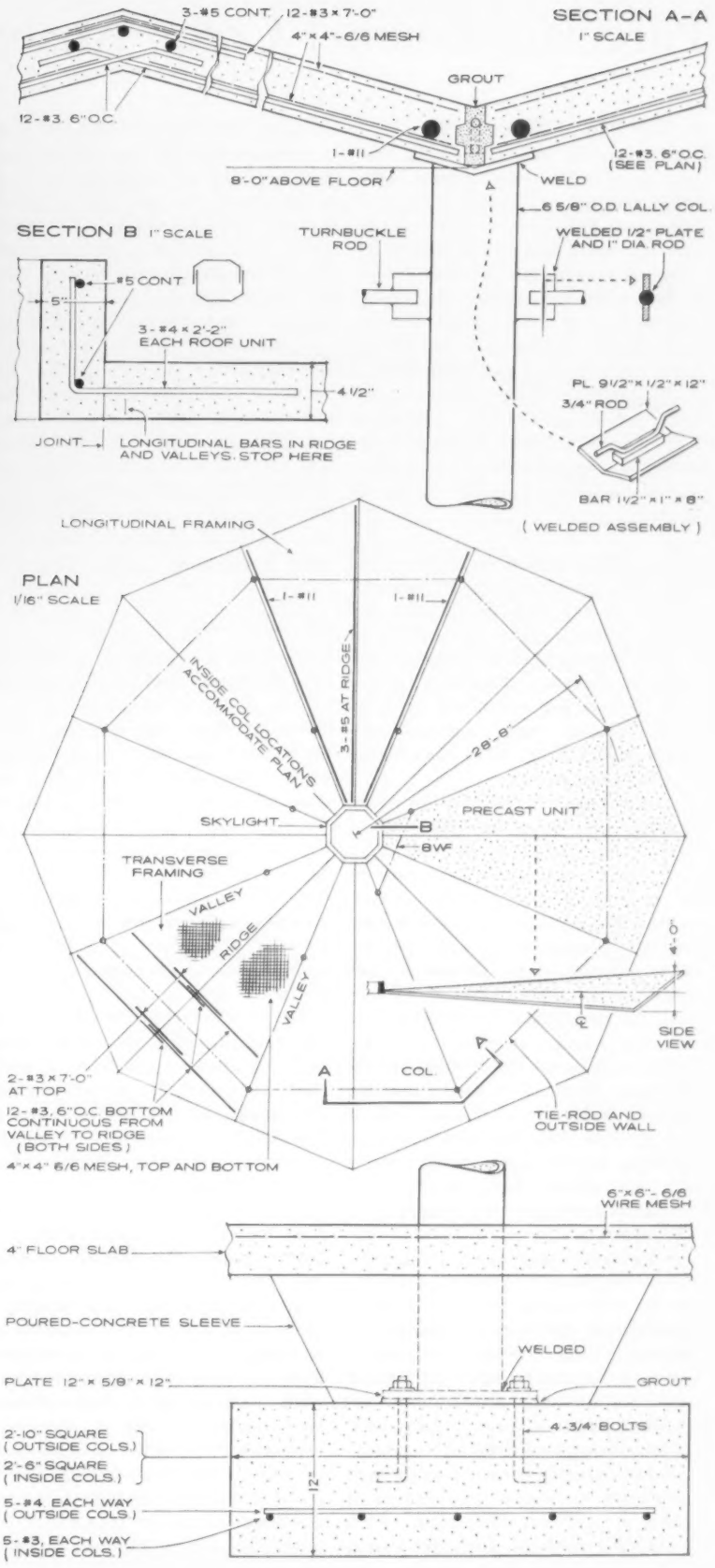
In preparing to apply stain, wood should be dry and thoroughly cleaned. For best results, two coats of stain are ordinarily recommended for exterior work; one coat, particularly the darker shades, will give satisfactory results when economy is an important factor. Stain should be applied with brush allowing each coat to dry thoroughly before any subsequent coat is applied. Stain should be thoroughly mixed in accordance with instructions on can, and, if more than one container of stain is used, it is always good practice to intermix before application. Stain can also be applied on rough-surface wood, or shingles, by dipping. Wood must be dried to 12 percent moisture content as recognized by an accepted moisture meter. Wood should be dipped in and out of staining vat several times, then racked on edge with each piece separated from the other until stains are thoroughly dry. Stain may be used over paints when the previous surface is well oxidized, or when gloss has disappeared. Signs of blistering or peeling should be thoroughly scraped and sanded, of course, before applying subsequent coats of stain.

Folded-Plate Concrete Roof For Octagonal House

An octagonal house, located in Florida, is roofed by eight tapered concrete-plate sections, each being 24′ wide and 34′ long. Focus of this article is on the structural design of this unusual roof.

By combining the advantages of thin-shell design, multiuse of prefab forms, and lift-slab construction, Architect Nelson A. Faerber, Naples-on-the-Gulf, Florida, has not only achieved a low-cost concrete roof but also has proved that medium-budget construction can benefit from these advantages.

Due to an octagonal floor plan, this 70′-diameter roof divides into eight identical folded-plate sections of 400 sq ft each. By constructing two casting forms —of 2″ x 4″ trusses sheathed with ¾″ plywood—four sections were cast on each form. A casting schedule of one section per day was followed by placing reinforcing steel in one form, while a section was cast in the other. The resulting labor time required to pour and finish-trowel one section was little more than that required to place a slab of similar area on grade. Edges of each section were cast as keys to accommodate 1½″ grouted joints at each valley. Each of the sections stops 3′ short of the center of the roof to allow for a 6′ skylight. After all sections were erected, a reinforced-concrete tension curb was poured around



the skylight, receiving three No. 5 bars bent up from each of the eight slabs. A 3750 psi concrete design was used for the 4″ thick sections which contain ½″ steel plates threaded to receive ¾″ bolts from the lifting apparatus.

Slabs rest directly on 6″ lally columns having 12″ x 12″ bearing plates at their tops. A 1½″ wide spacer block was placed atop each bearing plate to prevent adjoining concrete section edges from compressing on contact. Around the eight exterior columns, a peripheral 1″ tie-rod with turnbuckles in each bay was used to plumb the columns. When all slabs were in place, turnbuckles were welded. Temporary cross-bracing lessened initial thrust to columns during erection.

Although total erection time was only 28 hours, it is believed that this time could be reduced by 50 percent through modifications of the lifting plates and lifting apparatus.

The 3200 sq ft area of concrete roof was cast and erected at a cost of $2.25 per sq ft, including supporting columns. The roof surface is finished with three coats of water-repellent masonry coating, and each of the eight valleys is waterproofed with a 14″ wide strip of vinyl-plastic membrane — totaling one half of the cost of a conventional built-up roof.

Porcelain-Enamel Color Analysis

BY EDWARD MACKASEK

Most practicing architects are by now fully aware of the countless color possibilities that can be obtained with porcelain enamel. Few, however, are as familiar with the means to guarantee that exact colors are provided or reproduced. In this discussion, the author—formerly Managing Director of the Porcelain Enamel Institute and now associated with Davidson Enamel Products, Inc., Lima, Ohio—reviews basic principles of the science of color, and discusses available methods of matching and measuring. In somewhat abbreviated form, the contents of this presentation originally appeared in Inland Architect.

Color on the exterior walls of new buildings being erected in the vast program of construction that is rehabilitating America's major cities, is contributing a new dimension of character to our commercial centers. Façades in green, blue, yellow, red, black, and gold—in many shades and combinations—now mingle with the more somber hues of traditional masonry.

Although the trend to color had its beginning shortly after the close of World War II, its rapid growth in more recent years can be attributed in large measure to the technical progress that has been made in the development of new materials and improvement in panel-wall design. A further aid in this direction has been the co-operative effort of industry and the architectural profession to obtain the revision of obsolete building codes blocking the use of desirable new materials. These efforts have cleared the way for wider use of various kinds of curtain walls and a vast number of such buildings have been constructed throughout the country with colorful infill panels of metal, porcelain enamel, glass, and ceramics.

This contemporary use of color is not to be regarded as a fad or a passing fancy: it is here to stay. Nor is it exclusively an American phenomenon, although it has been given its greatest impetus in this country. Currently, walls of color are appearing on structures being built on every continent, and in almost every country around the globe. Acceptance of the color trend is making headway even in countries where the traditions of past centuries weigh heavily upon the architect. For example, an Italian, visiting the United States in 1946 as a member of a European productivity group studying new developments, commented on the extensive use of porcelain enamel for buildings, and then added: "But we will never use architectural porcelain enamel in Italy. We have such beautiful and inexpensive marble." Yet today, Italy is one of the most enthusiastic of the European nations supporting the use of color for buildings. The Italian architect has discovered that he can obtain bright colors from porcelain enamel—as well as other new materials—and achieve effects not possible with conventional materials. With these, he can give to his architectural design an emotional quality that has a strong appeal to the Italian temperament.

Effects of Color

The subject of color is an exceedingly complex one and involves an understanding and application of some of the principles of physics, psychophysics, and psychology. The visual process is the result of the effect of light upon the retina of the eye. However, the properties and characteristics of this light can be measured and defined in terms that do not involve the eye. This is the function of the physicist. Although the physicist can tell if two beams of light are alike, or how they differ, he cannot, acting within his own sphere, tell how they will look to an observer.

The role of psychophysics is the scientific study of the reactions of the visual mechanism under a specific set of conditions. Some work has been done to determine methods of calculating appearance based on observers' reactions, but it is only a beginning. Much more remains to be done in this field.

Psychology seeks to determine the many ways in which light may affect the consciousness. It is largely concerned with tendencies and how they operate. That color does produce emotional or psychial reactions is a scientifically established fact, as well as a matter of every day experience. Examples, almost without number, can be cited to substantiate this point. Color printing, as in magazines, by showing consumer goods in actual color excites desire and increases sales, as comparative advertising surveys prove. Color photography and color television are far more appealing than black and white. A physician has written a book to describe therapeutical treatments that have successfully included color prescription. Architects frequently speak of "warm" and "cool" colors—referring, in general, to colors from pure yellow through orange and red as "warm," and colors from greenish yellow through green and blue as "cold." Distance, too, has an effect on color. A group of small patches of color, seen at a distance of 15 or 20 inches, may appear to integrate into a harmonious color scheme, whereas viewed from a greater distance, say 15 feet or more, they may appear quite disconnected. A plain area of color may appear much more saturated and colorful when viewed at close range, than when viewed at a distance with the same intensity of light. We have no clear understanding of this relationship between color and the emotional reaction that it produces.

The broad conclusion to be drawn from this multiplicity of evidence is that color can have good effects if it is applied with knowledge, and that it may have bad effects if misapplied. However, in the present status of color technology, there is little data available to the architect to enable him to determine, in advance, the effect that his color selection will have on the observer and, of course, no basic methods are available to help him find the color that will create a predetermined effect.

Both the architect and the supplier of color have a vital stake in the development of color in building. They must lend their support to the research efforts that are now being carried on to widen our knowledge of the intricate relationship of the complex factors that must be solved before we can attain the highest efficiency of color applications.

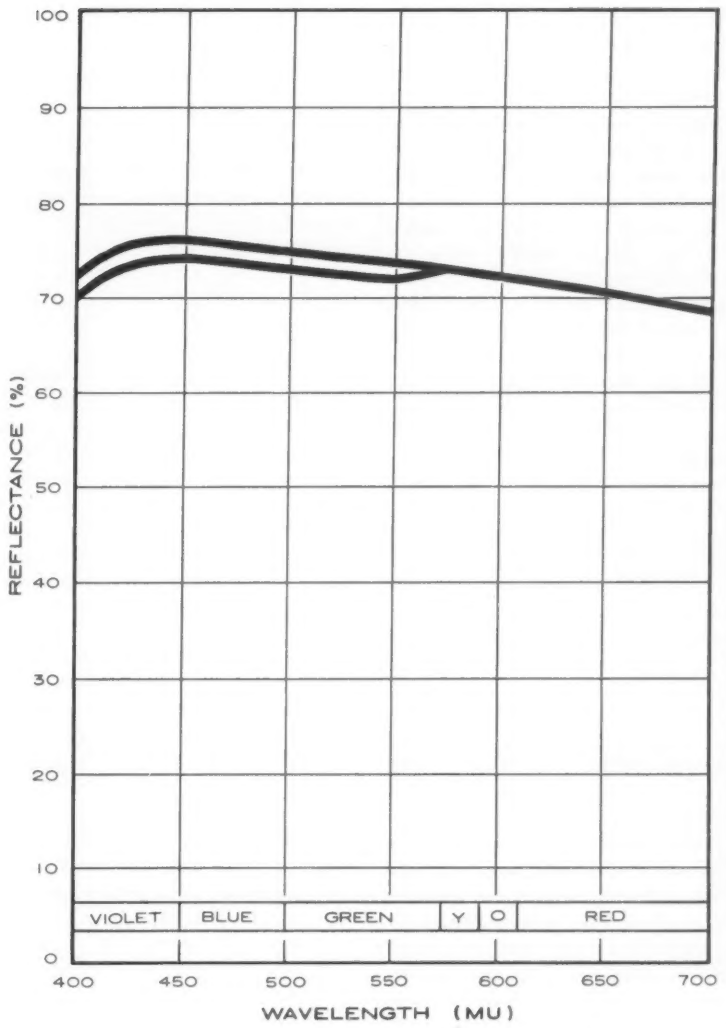
Color Matching

After he has decided on the color that he wants, the architect submits a sample of the color to the building material supplier for matching. This might be in the form of a piece of colored paper, metal, stone, tile, porcelain enamel, glass, or even cloth. The surface finish might be dull, lustrous, glossy, or textured. The nature of the material and its surface affect optical characteristics, and the problem of matching two dissimilar materials having different surface finishes often becomes a very difficult one for

the manufacturer—as well as the buyer who must determine if a match has been achieved.

If the manufacturer has a range of standard colors within which selection must be made, he will submit the nearest standard shade to the one required and can do no better. If the material is porcelain enamel, the architect has an unlimited color range. While some porcelain enamelers, as well as the Architectural Division of Porcelain Enamel Institute, provide color charts. These serve primarily as guides to indicate shades most widely used and to expedite selection and production. Porcelain-enamel manufacturers will undertake to match any color. Their laboratories contain files of many hundreds of color compositions from which a sample request can usually be matched without difficulty. However, if a composition for the required shade is not found in the files, it can be developed in the laboratory at a nominal extra charge. Once the composition has been established and recorded, the color can subsequently be reproduced when required, time and again, in exact match. Not infrequently, porcelain-enamel manufacturers receive and fill orders from customers for parts to match panels erected 20 years or more previously.

After a color match has been agreed upon, sample plates—properly marked for identification—are filed by both architect and manufacturer. Panel production is then started and it becomes the manufacturers' responsibility to see that all finished parts match the approved sample "within commercial tolerances." The differences in shade covered by this term are due to slight vagaries in the processing operations; however, they are in general so small that they are not noticeable to the ordinary observer.



Spectrophotometric curve showing the variation in two tones of white.

Measurement of Color

Visual Measurement. Color matching by the simple process of visual comparison works well when tolerance requirements are not too exacting, and if the eyes of the observers produce approximately the same psychological responses to the color stimulation. However, the ability of the eye to discriminate varies considerably with different individuals and under different viewing conditions. Lighting is important and, when possible, matching should be performed under north skylight. The sensitivity of the average eye also varies with color. It is keenest to the central region of the spectrum, and least responsive to the outer limits of the visible portion of the spectrum, that is to red at one end and to violet at the other. There are also psychological factors that may have effect in this situation. For example, an appliance manufacturer proved that color judgment was affected by the inspector's mental outlook; if disturbed by worry or domestic troubles, his efficiency went down.

As the results of color research are derived in large measures from the observations of the so-called normal observer, color technologists found it necessary to standardize a normal observer's qualities. This was done in 1931 by the International Committee on Illumination. In some cases, contracts have been written calling for a standard observer to evaluate results.

Measurement of Color with Instruments: Color is the sensation produced when light, from a given object, meets the eye of the observer. One cannot, of course, measure the sensation; however, there are attributes of color that can be

segregated, recorded, and evaluated, which provide a basis for color measurement. These attributes are:

1 Hue, referring to the colors in the spectrum as blue, red, yellow, etc.

2 Saturation, defined as the percentage of hue in a color, as when one says pale or deep, weak or strong. (Also termed chroma.)

3 Brightness, defined as the quantitative aspect of the mental image. It is an indication of the apparent amount of color. (Also called value.)

The spectral distribution and intensities of light reflected from a color specimen can be measured, and three qualities closely related to the psychological attributes of hue, saturation, and brightness can be calculated from the data. In this way, the colors of samples, illuminated and viewed under identical conditions, can be compared by physical methods.

Spectrophotometric Method. The physicist's tool for measuring color is the spectrophotometer. With it he can determine completely the physical basis of any color, whether it proceeds from a small distant source of light, or from a large luminous area. It also tells him the basis by which the light source imparts its colors to objects.

A spectrophotometer produces a spectrum of colors. By passing a narrow slit across the spectrum, only a small band of color is allowed to pass through it. By changing the position of the slit relative to the spectrum, this narrow band of color can be changed continuously from violet to the red end of the spectrum. This beam of colors is then divided into two parts. One of these is reflected by the sample to be measured and the other part is reflected by the standard of comparison, which is magnesium oxide. In this manner, a comparison is made between the light reflected by the standard and that reflected by the sample. The result appears as a graph or plot showing the percentage of light reflected as a function of the various colors of the spectrum. A typical spectrophotometric curve for two different samples of white porcelain enamel are shown (*see chart*).

The spectrophotometric method of color measurement is an accurate system based upon physical measurements. It is independent of the psychological variations which tend to affect visual determinations. A spectrophotometric curve compares a permanent record of the color and one does not have to rely on the preservation of the sample to duplicate the color at a future date.

A spectrophotometer is a costly instrument and its installation is justified only if there is a large volume of color matching to be performed, as in a laboratory or the color-control department of a plant. However, a number of commercial testing laboratories throughout the country are equipped to supply spectrophotometric analyses on order.

Color Designation

The color-designation systems most widely used by American industry are the Munsell system[1] and the Color Harmony Manual.[2]

In the Munsell system, colors are described by the three attributes listed above: hue or color of a sample, its brightness or value, and by its chroma or purity. A three-dimensional picture of this system can be most easily thought of by considering it as the form of a tree. The trunk represents the neutral or gray colors ranging from black at the bottom to white at the top. Branches represent various colors. For example, all branches that point North, let us say, represent the red colors — the lighter shades of red being the branches near the top and the darker shades the branches near the bottom, in the same manner the neutral grays were considered. Other colors will appear in a similar manner extending out as other branches from the trunk, in different directions. At the trunk itself, the color is a neutral gray. Proceeding toward the tip of the branch, the color observed becomes more pure until at the tip itself one finds the purest color for that particular brightness. One can also say that all colors on the same branch, for the same hue and value, vary in chroma from zero at the trunk to a maximum at the tip.

To use this tree example to describe a Munsell color notation for a sample, we must first cite the hue or direction of the branch; then we must tell the value or height of this branch above the ground; and lastly, we must give the chroma, or distance along the branch. Thus, we have the three color attributes.

A typical Munsell notation for a piece of white porcelain enamel could be 6 PB 8.83/0.5. This means that the hue is 6 PB; that is: purple blue, the particular shade being designated by the number 6. The value is given by the next figure as 8.83. This corresponds to a brightness or visible reflection of 75 percent. The number after the slant indicates the chroma of the sample to be 0.5. This means that the sample is only slightly tinted because of its low purity of color.

Color Permanence
Acid, Weather Resistance

Visual appeal of a structure and the psychological concept that it was designed to create are destroyed if colors fade. Selection of a material that will retain its color is as important, therefore, as selection of the color itself. The color components of the wall must be capable of giving lifetime service without fading or surface separation. Ceramic colors, formulated from inorganic materials and mineral oxides, have proved their ability, over the centuries, to resist deterioration by time and the elements. Porcelain enamel, an important member of the ceramic family, is defined technically as "a substantially glossy inorganic material bonded to metal by fusion above 800 F." It is also described from a color standpoint by D. B. Judd as "pigment in a medium of glass supplying its own permanent color as an opaque coat . . ."

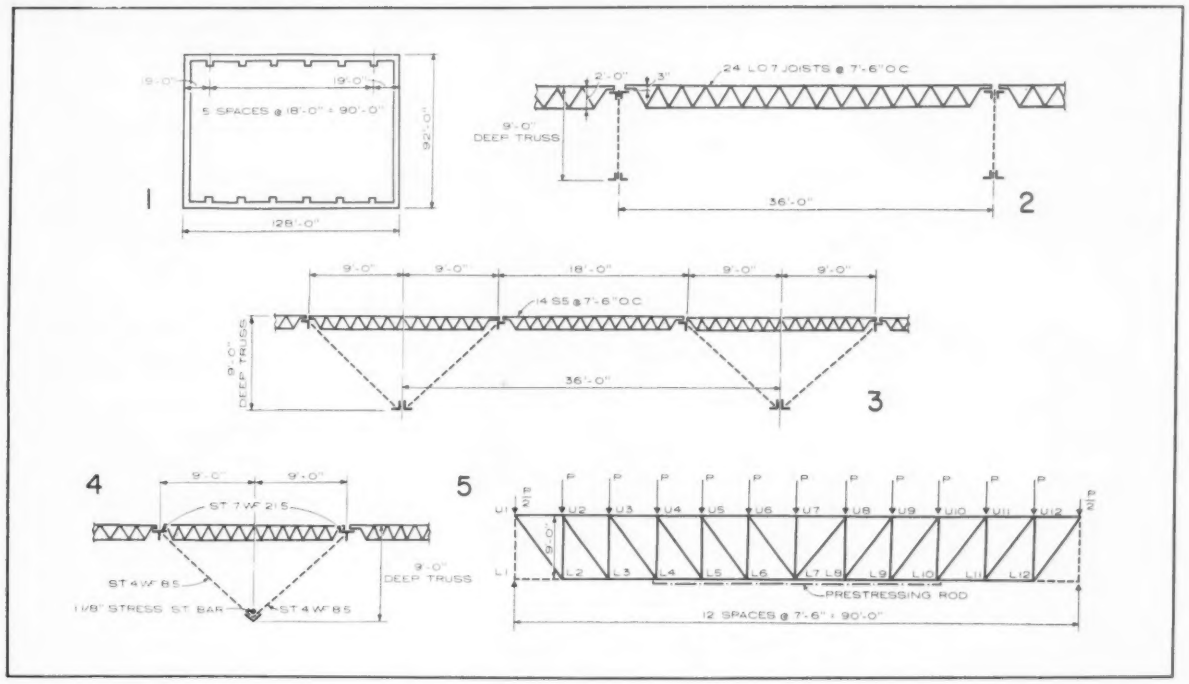
Although color permanence is one of its chief characteristics, not all porcelain enamels are capable of meeting the requirement of lifetime durability in this respect. A proper grade, however, can be assured by including in the architectural specification a paragraph stating that the porcelain enamel shall have Grade "A-A" or "A" acid resistance. The use of "acid resistance" quality, as a measure of "weather resistance," is based on the fact that atmospheric attack is caused primarily by the presence in the air of acid-forming gases, which, combined with rain produce corrosive liquids. The correlation between acid resistance and weather resistance has been established by the results of a research program, sponsored jointly by National Bureau of Standards and Porcelain Enamel Institute, to study the weatherability of architectural porcelain enamels and covering a period of 15 years. The Bureau report of the investigation[3] comprises the basis for the industry recommendation of not less than Grade "A" for weather resistance. Most porcelain-enamel colors are Grade "A-A"; however, there are a few colors that cannot be manufactured in this quality and are supplied in Grade "A".[4]

[1] Munsell Color Company, Baltimore, Md.

[2] Color Standards Department, Container Corporation of America, Chicago, Ill.

[3] Fifteen-Year Exposure Test of Porcelain Enamels; Building Materials and Structures Report No. 148.

[4] Test for Acid-Resistance of Porcelain Enamels, Bulletin T-7; Porcelain Enamel Institute, Washington, D.C.



Economy in Wide Spans Through Prestressed Steel

BY PAUL ROGERS

The author—Senior Partner of Paul Rogers & Associates, Consulting Engineers, Chicago, Illinois—reminds the reader that the potentialities of prestressed-steel construction are many. Most recently, he found an application for this construction method in the design of the United Air Lines hangar at O'Hare International Airport. Only a brief presentation of prestressed steel is offered here; but enough data is given to allow the reader to appreciate this type of construction.

Numerous business enterprises require large uninterrupted spaces for their operations. In this category, one can name shopping centers, manufacturing plants, automobile showrooms and garages, assembly halls, etc. Employing conventional methods, such as trusses, long-span joists, and so on, may increase the costs to such high levels that the long-span type construction might not be economical.

The prestressed-steel space-truss, described in this article, provides an economical and novel method for spanning large areas. For the best illustration of this method, a specific example is selected. Assume that the structure consists of a rectangular building 92′-0″ wide and 128′-0″ long 1.

A conventional method of spanning such a structure would call for trusses, spaced approximately 36′-0″ apart 2. Such a roof structure, not considering columns, etc., weighs approximately 6.35 psf.

Now, let us assume that the top chord of the 9′-0″-deep truss spreads apart 9′-0″ on either side 3. Actually, the top and bottom chords retain the same cross-sectional areas as the conventional truss. There is a slight addition to the weight of the web members, the size of which are mostly governed by slenderness ratio. On the other hand, the roof joists are reduced to 14″ short-span joists.

A further economy may now be obtained by prestressing the bottom chord. This can be obtained by the use of stress-steel rods or cables. Through prestressing, the tension force in the bottom chord is considerably reduced, and the member is selected for such a reduced force. The cross-section of the truss may assume the following shape at midspan 4. Its elevation is also shown 5.

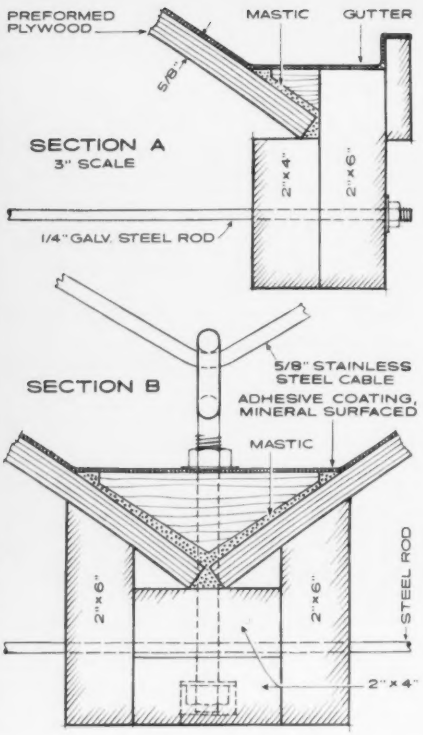
This roof structure, again excluding columns, weighs 5.29 psf. Thus, the conventional truss construction requires approximately 20 percent more steel than the prestressed space-truss system. As an example, a medium-size industrial plant having an area of 100,000 sq ft may realize a savings of 53 tons.

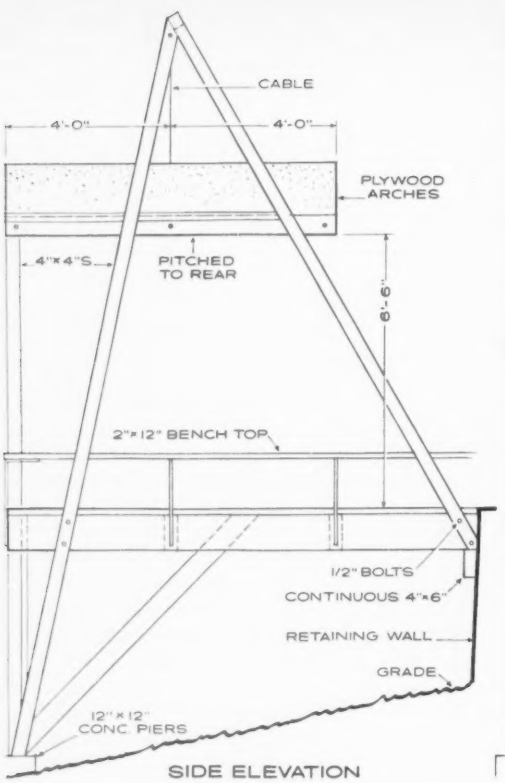
There are other latent benefits to this system. The triangular cross-section is inherently stable; thus, bottom chord bracings are unnecessary. The trusses may be supported on masonry piers, or steel columns, either 18′-0″ or 36′-0″ apart.

The area enclosed by the triangular truss may be utilized for air-conditioning ducts and/or other equipment, and the sloping face of the truss is ideal for advertising or identifying products.

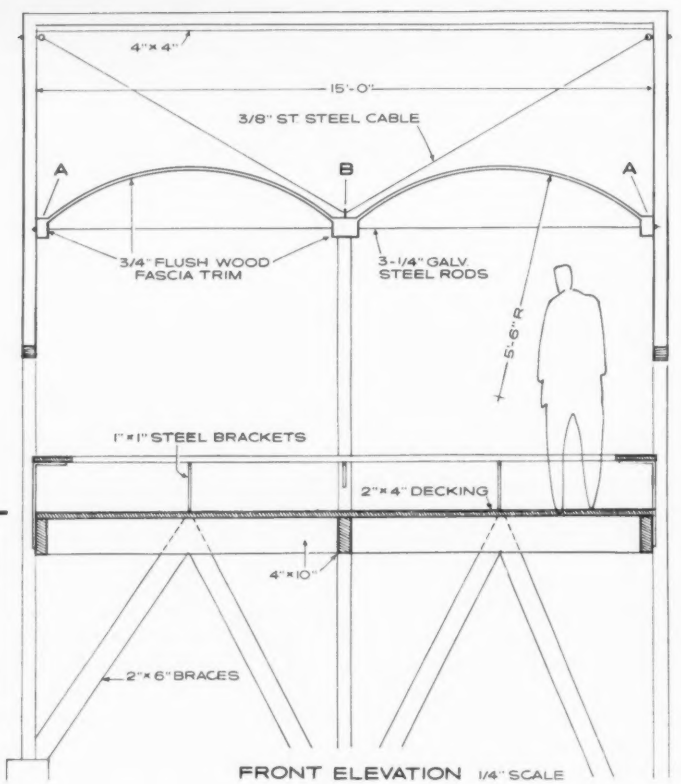
The writer believes that prestressed triangular trusses help attain considerable economies, while improving design and construction.

PHIL PALMER



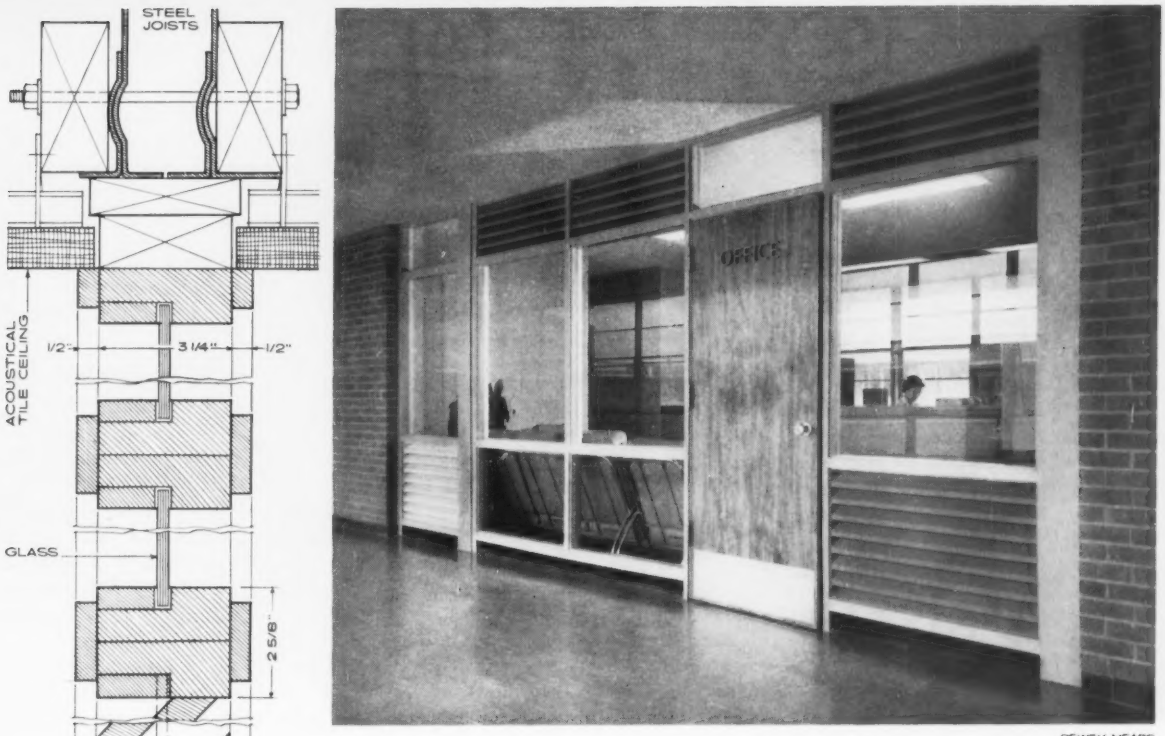


SIDE ELEVATION

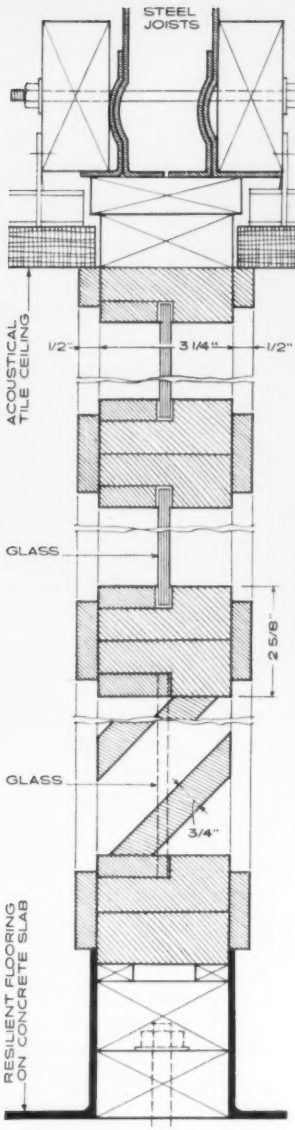


FRONT ELEVATION 1/4" SCALE

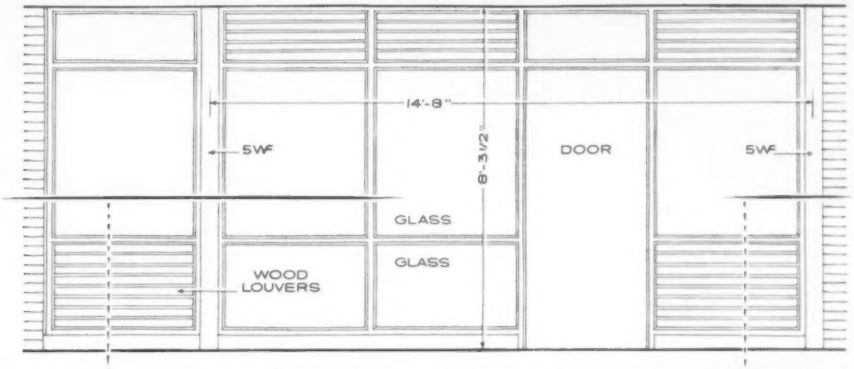
CORLETT HOUSE: San Francisco, California CORLETT & SPACKMAN, Architects	SELECTED DETAIL OF CANOPY



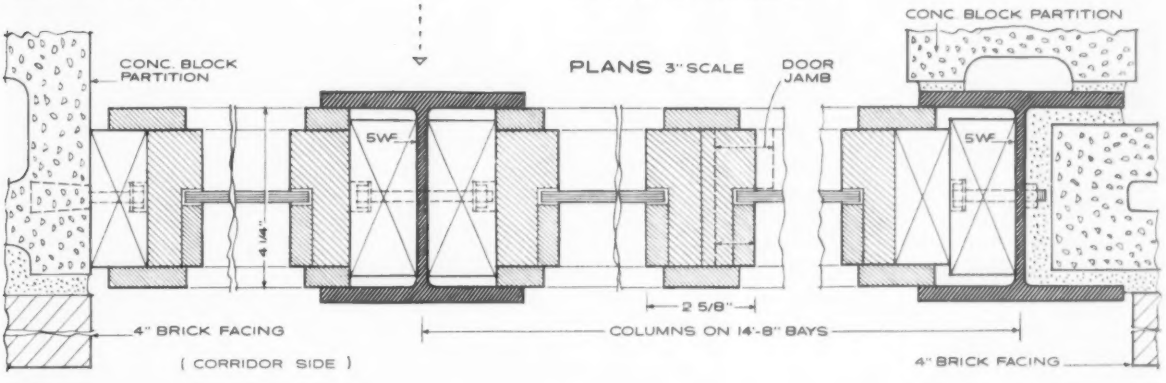
DEWEY MEARS



SECTION 3" SCALE



ELEVATION 1/4" SCALE



CRAIN JUNIOR HIGH SCHOOL: Victoria, Texas FEHR & GRANGER, Architects	SELECTED DETAIL OF WINDOW WALL

The Four Seasons Multipurpose Ceiling

BY WILLIAM J. McGUINNESS

This highly complex ceiling, a result of meshing the talents of numerous consulting experts, is described by the Chairman, Department of Structural Design, School of Architecture, Pratt Institute, Brooklyn, New York.

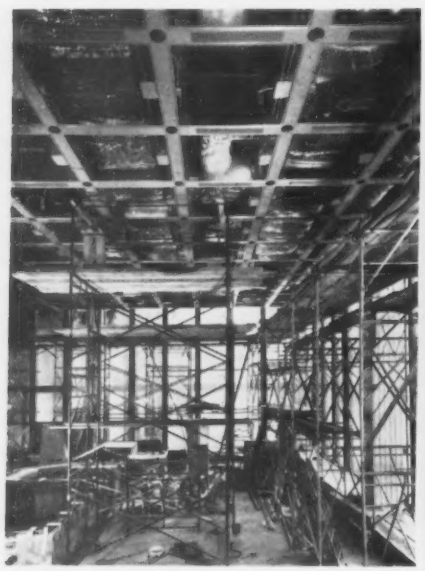
Entering the Seagram Building from Park Avenue and passing straight through the elevator lobby, one enters the foyer of the Four Seasons Restaurant. Facing the enormous 1919 Picasso, a turn to the left (north) leads to the dining room with its featured table-high central water pool, or a turn to the right (south) brings one to the bar-grill and its two ceiling-hung, bronze, Richard Lippold sculptures. Each of these rooms is nearly square. On the east side of the dining room, a stair leads to private dining room No. 1. On the east side of the bar-grill there is a mezzanine from which access is had to private dining rooms Nos. 2 and 3. This U-shaped complex of rooms encloses the kitchen and a visible wine "cellar." Planned and equipped for a multitude of functions, the rooms nevertheless present the appearance of formal simplicity with a limited number of uniform finishes including those of the important ceilings.

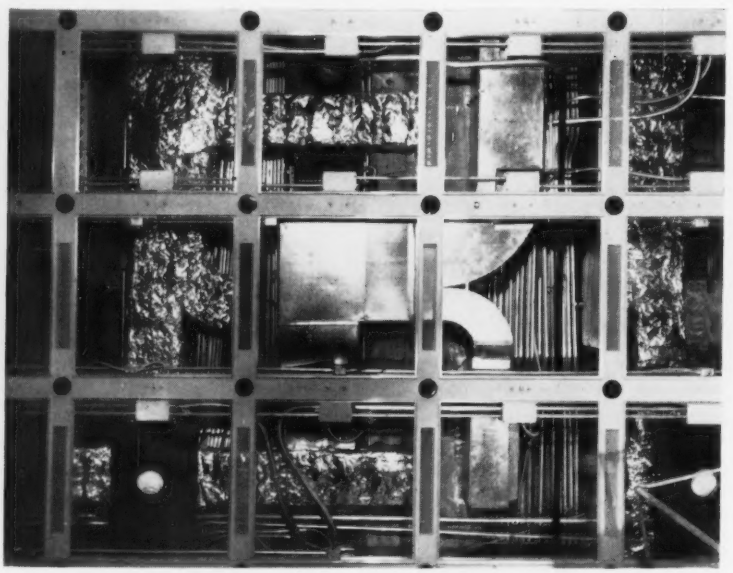
Each of the two main rooms has two adjacent walls entirely of glass. The other two walls in both cases are of simple wood paneling to provide an appropriate background for a profusion of natural tree and plant growth. The planting affords a natural sculptural effect enhanced by much up-lighting in addition to that from the ceilings.

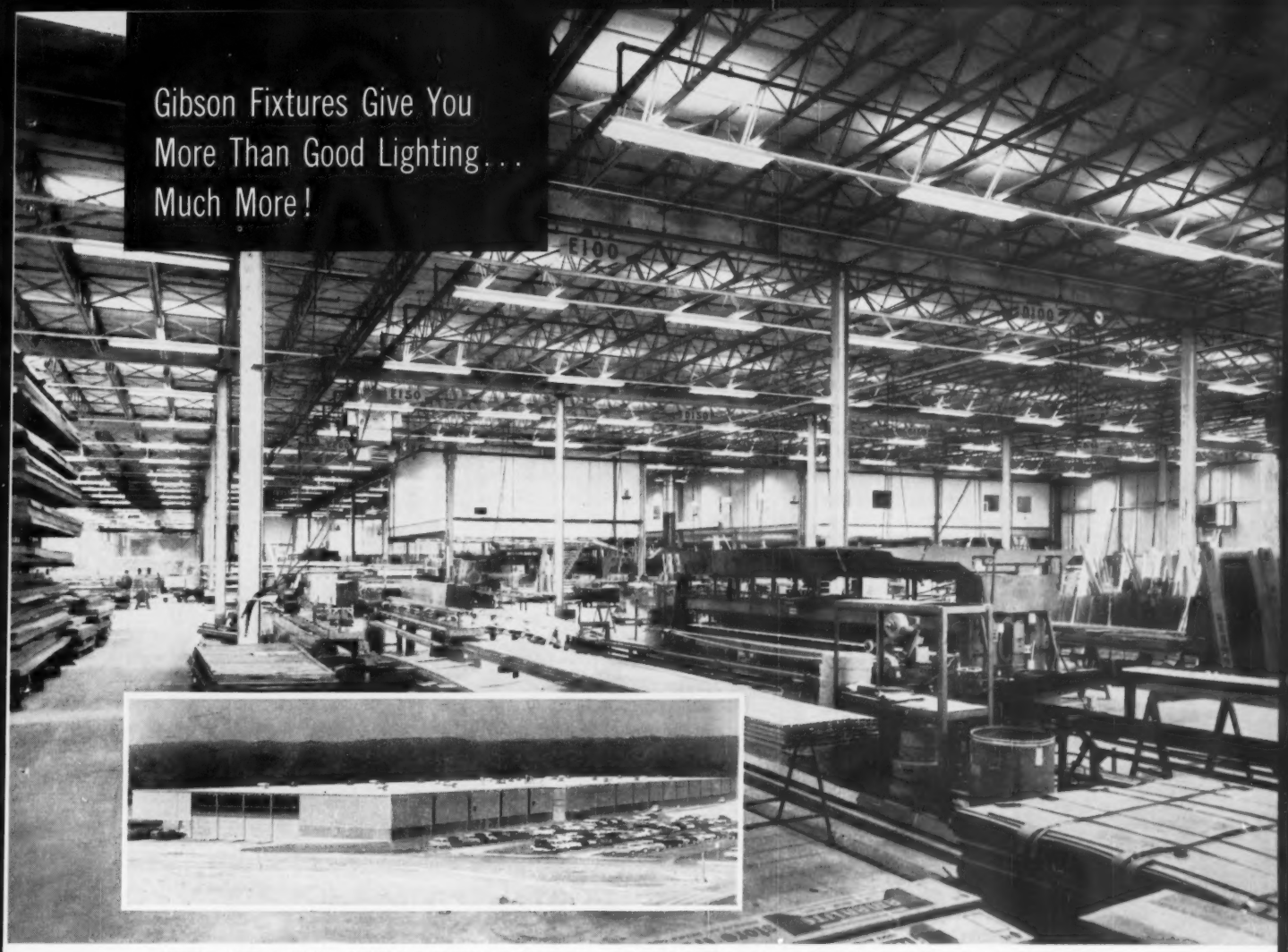
The ceilings are the staging areas for the many functions of the restaurant complex. Most of the environmental control of the rooms is handled through their surfaces. These facilities include supply and return of conditioned air, acoustical sound reduction, sound-system speakers, flush, insert-type hangers for the suspension of special flood lighting, plug-in electrical outlets for this special lighting, area illumination of adjustable intensity and low-brightness sources, concealed special lighting for sculpture and planting, roll-down projection screens, and sprinklers.

This composite, multipurpose ceiling evolved from the collaborative effort of many people. It is entirely of special design and of special manufacture. The design was by Philip Johnson Associates, Architects, whose office co-ordinated the associate designers—William Pahlmann Associates on the general design, Richard Kelly on lighting, and Edison Price, Inc., for fixtures and for the rib and panel surface of the ceiling. Price manufactured and installed the lighting fixtures and the ceiling surface structure. Jaros, Baum & Bolles designed the air conditioning and the electrical systems. Bolt, Beranek & Newman were consultants for the acoustical installation. General illumination was required which could be varied in intensity from one to two ft-c to a maximum of about 15. For this purpose Richard Kelly called for 100-w silver-bowl incandescents 4′-7½″ on centers in each direction set in the dark light-type fixtures. This set a power demand of about 4.7 w per sq ft of floor area. Many times this power is available, however, for lighting

Continued on page 198







ARCHITECT, MASTIN & SUMMER; ELECTRICAL ENGINEERS AND CONTRACTORS, CLEVELAND ELECTRIC COMPANY; GENERAL CONTRACTOR, IRA H. HARDIN COMPANY

GIBSON "PLUG-IN" FIXTURES SIMPLIFY MAINTENANCE FOR AMERICAN ART METALS

American Art Metals Company, Atlanta, uses Gibson fixtures with Power Groove lamps throughout its new plant. "We particularly like the ease of maintaining these fixtures," says E. L. McNiff, general works manager. "When a conventional fixture needs servicing, an electrician may spend half an hour or more up on a ladder to do the job. This distracts production workers. But when one of our Gibson fixtures needs attention, it is simply unplugged and another 'plugged-in' in its place—in the time it takes a man to climb a ladder."

The exclusive "plug-in" feature of Gibson fixtures also offers substantial savings in installation costs and allows for re-spacing of fixtures and increasing lighting intensities any time without re-wiring.

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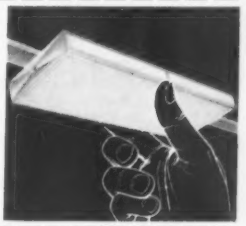


that can be plugged into one of two convenience outlets that occur in each panel of the east-west stringers of the ceiling grid. Some of these panels have three such outlets and in such cases the center one in each trio provides 50 amp for about 5000 w of lighting. Boxes for these outlets may be seen in the photographs. To illuminate the sculpture and other appointments, low-angle lateral lighting was contrived originating at special fixtures above the regular circular openings at the stringer intersections. This, of course, called for the omission of the 100-w general purpose bulbs at these points. Accordingly, the next adjacent row of fixtures housed 200-w bulbs to make up for the omission.

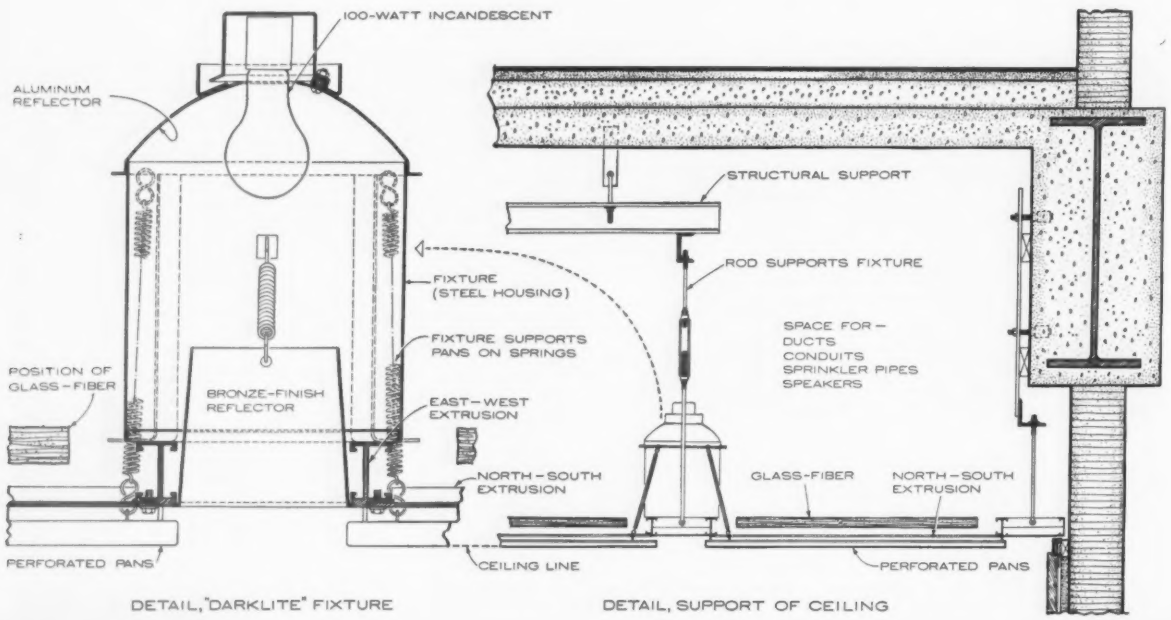
In several of the smaller rooms, notably private dining rooms No. 2 and No. 3, the square aluminum "pans" that are spring-suspended from the lights at the intersecting stringers are set with small "sparkle" lights. These appear through small holes slightly over 1″ in diameter, and roughly 6″ to 8″ apart in a studied random pattern. These are in addition to the general pattern of lights at the stringer intersections. These small 6-v bulbs, not illustrated here, are set in shiny reflectors with many facets.

The operation of all lights—general lighting, sparkle lights, sculpture lighting, up-lights at planting, general glow at the alabaster slabs in front of the Picasso—is not left to chance nor entirely to the individual decisions of the restaurant management staff. On-off operation and the planned control of dimmers are among the operations that have been studied in the greatest detail by the architect and the lighting consultant. The effects of sun or shade, time of day together with interior demands for the specific use—i.e. luncheon, cocktails, dinner, supper—have been combined into "programs." At the captain's and mâitre d's stations are program-buttons that are pushed at various hours and for the several probable occupancies. Each station controls the visual climate and the esthetic tone of the surrounding rooms. Plant Physiologist, Dr. O. Wesley Davidson, has found that the low-light intensities, two ft-c during dinner for example, are inimical to the healthy development of the plants and trees within the rooms. To overcome this, supplementary portable lighting in the form of mercury-vapor lamps is turned on each day from sunrise until opening time.

The heavier aluminum extrusions run east and west in reasonably long lengths. These are perforated to accommodate the dark lights; they also carry the special outlets and the support-inserts. The lighter north-south extrusions are cut to lengths that fit between the heavier east-west supports. These lighter ones carry registers. The steel housing of the light fixture is fastened to the heavier aluminum stringers and in turn supports, by springs, the aluminum pans. These pans can be snapped in and out of place easily. They are perforated with many small holes for acoustic absorption. The sound absorber is a glass-fiber rigid board set 3″ above the pan surface. This space permits air to be exhausted from the room through the pan holes and around the edges of the glass-fiber to the air-conditioning return-plenum above the ceiling. No tolerance or adjustment was needed in the fastening of stringers which were field-riveted and checked out to within 1/32″ in aggregate length across the room. The steel jigs from which these parts were cut and drilled have an accuracy of several ten thousandths of an inch. They resemble the jigs of an aircraft manufacturer and Edison Price is justly proud of them. All of the aluminum work, stringers, and pans were epoxy-painted at the factory.

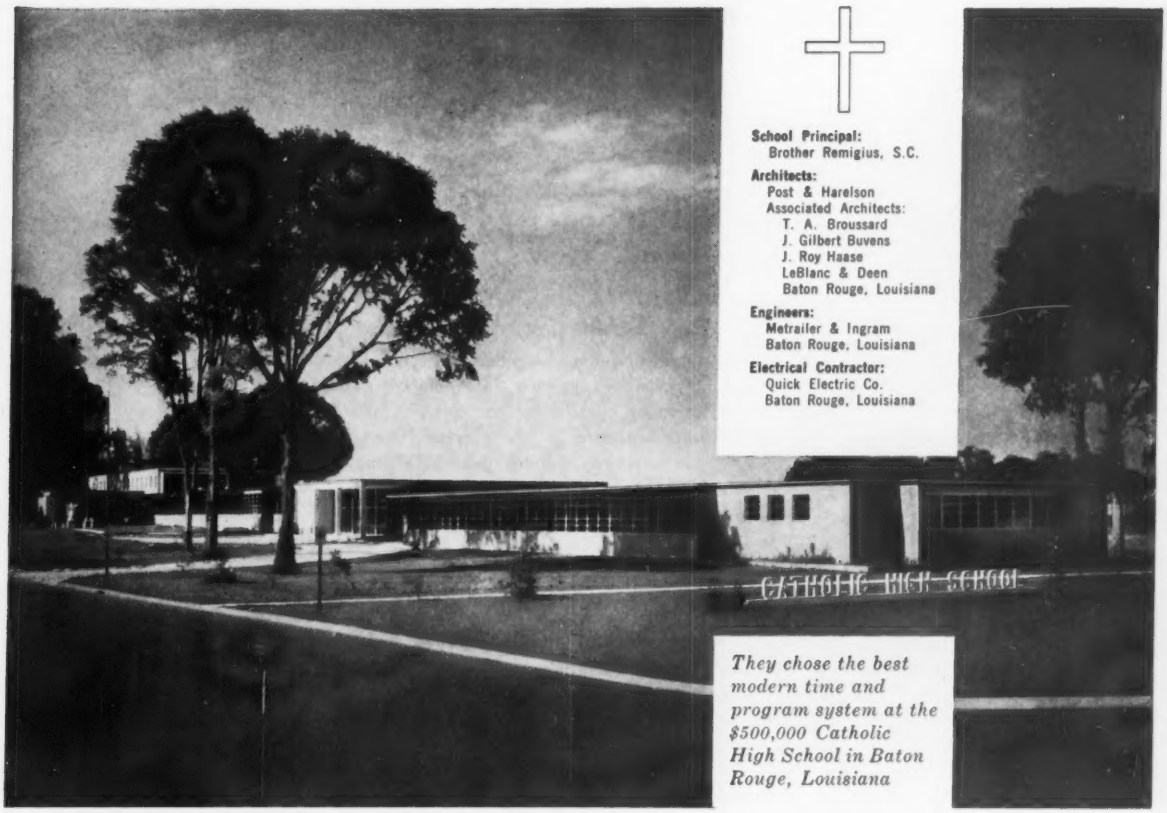
Space is afforded above the frame of the extrusions to accommodate air-conditioning ducts, some covered with reflective-surfaced insulation, and for rigid and flexible electric conduits, sprinkler distribution piping, and speakers.

The incandescent fixtures are truly "dark" at their light sources. Looking up directly at them, it is almost impossible to experience any brightness. The aluminum reflector at the top provides a bright reflecting surface, but this can hardly be seen past the very special bronze-finish reflecting "thimble" that is held up by springs to the inside surface of the fixture casing.



DETAIL, "DARKLITE" FIXTURE

DETAIL, SUPPORT OF CEILING



School Principal:
Brother Remigius, S.C.

Architects:
Post & Harelson
Associated Architects:
T. A. Broussard
J. Gilbert Buvens
J. Roy Haase
LeBlanc & Deen
Baton Rouge, Louisiana

Engineers:
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Product Literature Standards Reviewed

BY HAROLD J. ROSEN

Discussion of the optimum qualities of well conceived manufacturers' literature, by the Chief Specifications Writer of Kelly & Gruzen, architects-engineers.

There is no question that extravagant advertising is a successful medium for the promotion of building materials and equipment to the ultimate consumer. But when product literature is directed to the attention of architects and engineers to acquaint them with the advantages of manufacturers' building materials and equipment, this should be prepared in a professional manner for presentation of the information contained therein. Glowing adjectives and unrelated color photography might be suitable for literature designed for women's magazines and the do-it-yourself cult; however, this type of expensive literature is destined for the architect's waste-paper basket.

Literature designed to be sent to architects, engineers, and specification writers should be concise, containing no more information than is necessary to apprise these people of the qualities, characteristics, and performance standards of the particular building material or piece of equipment that the manufacturer is presenting. A pretty picture illustrating the material may sell a housewife or an unknowledgeable client, and it may serve its purpose by bringing a message to the architect's attention. However, it is meaningless to him unless it contains the necessary information that can be transposed to drawings and specifications.

The number of hours that a busy architect can devote to reading product literature is limited, and manufacturers are vying with one another for this time. The literature that is worthwhile after a quick perusal will very likely be filed away for future reference if it is carefully edited, properly identified, and is of a standard filing size, normally, 8½" x 11".

In many instances, the manufacturer's literature will be the only source of information available to an architect or engineer for his consideration. His place of business may be far removed from territory covered by the manufacturer's representative or his sales engineer. If the architect decides to use the material or equipment, he will be limited in his detailing and describing the material to the extent that it is detailed or described in the product literature. For this reason alone, the manufacturer's literature should contain the vital information necessary for the complete integration of the product into the design and the specification.

I recall seeing the introduction of a new, rigid, insulation board several years ago by way of manufacturer's literature, with glowing claims for the product, but completely silent as to the "K" factor, or thermal conductivity of the material, a most important physical property.

Insofar as specifications are concerned, it is of utmost importance to manufacturers that when they prepare specifications for a product to be incorporated in their literature, that they be fully descriptive. This will permit the architect to reject the submission of substitute materials during the construction phase, if these do not fully measure up to the material specified.

In addition, it is essential that the manufacturer's specifications clearly indicate the variable and/or optional items that are available from the manufacturer. If these are not clearly defined, an architect may assume that a certain feature is standard equipment and can be expected under a base bid, and is not optional, requiring additional cost. Again, an architect may specify a process that cannot be achieved by the manufacturer.

For example, in following a manufacturer's specification recently for a projected aluminum window, several items were noted as not being clearly defined or specified. When it came to weatherstripping, the specification stated that at the architect's option, weatherstripping would be furnished. However, there was no indication of the type of weatherstripping available from this manufacturer as his standard. If the architect selected something other than vinyl, stainless steel, or pile mohair could the manufacturer furnish it? Then, again, perhaps the manufacturer was only equipped to furnish vinyl weatherstripping and in specifying something else, the manufacturer may have lost an order. When hardware was described, it simply stated that it was the manufacturer's standard. Here, again, the architect would like to know what the material is. Is it die-cast zinc, bronze, plated steel, or cast aluminum? Does the architect have any choice as to material? Aluminum insect screens were described as the manufacturer's standard. No details of construction, no specification for material described this item. What is one buying, a pig-in-the-poke? What standard for comparison do you have when the item is submitted for approval? In describing the finish of the material in the manufacturer's literature, a natural-aluminum finish was specified. Anodized aluminum was stated as being available if specified. It is not necessary to detail here the number of different kinds of anodizing and finishing processes available. But, it is very likely that an architect, not being familiar with the different kinds, might specify a certain process that this particular manufacturer is not equipped to handle, or that does not lend itself to finishes on aluminum windows.

Manufacturers spend considerable time and money in developing their products. In order to get their story across to architects and engineers so that these people will use their products, it is essential that the literature they compose, directed to the architect and engineer, be concise, clear, and descriptive. To accomplish this it might be advisable for the manufacturer to enlist the aid of professional specification writers in preparing or editing their literature. The services of these professional specification writers can be obtained through the local chapters of the Construction Specifications Institute.

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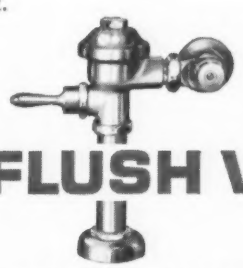

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The Contractor's "Guaranty"

BY JUDGE BERNARD TOMSON & NORMAN COPLAN

Legal principles involved in trials of the validity of the contractor's "guaranty" are discussed by Nassau County District Court Judge and a New York lawyer.

What is a contractor's "guaranty" worth? A New York inferior court has ruled that a builder's "guaranty" does not cover defects arising from inadequate plans which have been accepted by both owner and contractor. This decision raises questions as to the appropriate legal principles to be applied in interpreting a contractor's guaranty (*Russ v. Lakeview Development*, 133 N.Y.S. 2d. 641).

In the *Russ* case, the defendant made a written contract to build and sell a one-family residence. The agreement expressly provided the following:

"The seller unconditionally guarantees the foundation, walls, and roof against any and all defects for a period of one year from the date of delivery of premises."

After the plaintiff took posession of the house, extensive leakage in the cellar developed immediately. This condition was particularly aggravated by flood conditions which affected the neighborhood in general. The buyer complained to the builder, contending that under their contract, the builder was obligated to bear the cost of repair and alterations which would provide a watertight cellar. Upon refusal of the builder to make such repairs, suit was instituted by the buyer.

Witnesses for the plaintiff testified that although the house was apparently built in accordance with the plans and specifications, these plans were inadequate because of hydrostatic pressure against the foundation and the cellar floor, resulting in the flooding of the cellar. It was further testified that the flooding could have been avoided if the defendant, in building the house, had keyed the foundation walls to the footings, provided a special method of drainage around the house which was suitable for clay soil, and had treated the foundation walls and the outside before the backfill was put in place with a special waterproofing.

The New York Court ruled that the builder would be held liable only for improper workmanship or for the use of defective materials, and that he could not be held accountable for inadequate plans. The Court further stated that it was "immaterial whether the plans and specifications were originally prepared by the seller or by the buyer, as they were included in the contract of sale and the buyer thus agreed to accept a house constructed in accordance with such plans and specifications." The Court said:

"By the contract the defendant did not insure to the plaintiffs a watertight cellar, or a watertight foundation, even for a year. It agreed only to produce such a result as was possible with these plans and specifications by the use of adequate materials and by good workmanship. There is, therefore, no basis for shifting to the defendant the expenses which the plaintiffs will have to bear in order to make their cellar watertight."

The above decision, in limiting the contractor's "guaranty" is based upon the premise that defects arising from inadequate plans cannot be charged to the contractor if the parties "agreed" upon such plans. This reasoning appears to be unrealistic, as all construction is performed based upon plans which have been agreed upon by the builder and the owner. Earlier New York cases do not rest on this rationale. For example, New York's highest court, the Court of Appeals, had earlier ruled that a contractor need only show that he furnished materials and performed the work according to the plans and specifications prepared by the owner's engineer, even though the contractor had absolutely "guaranteed" that a boiler room would be watertight. (*MacKnight Flintic Stone Co. v. The Mayor*, 116 N.Y. 72).

In the *MacKnight* case, the contractor had undertaken to furnish the labor and materials for the construction of a courthouse, and had "guaranteed" that the boiler room would be waterproof for a period of five years from the date of the acceptance of the work. The contractor also agreed to construct the project in accordance with the plans and specifications furnished by the engineer. After the completion of the project, dampness and water entered into the boiler room. The owner contended that the contractor had not properly performed, and that under his guaranty, he was required to make the room watertight, even if the defect had resulted from the inadequacy of the plans and specifications. The Court found in favor of the contractor, holding that his guaranty did not include a warranty as to the sufficiency of the engineer's plans, but his responsibility was limited to the workmanship and materials used. According to the Court, the contractor could have furnished a waterproof room only by departing from the plans and specifications furnished by the owner. This of itself would have constituted a breach of contract. Consequently, the Court soundly ruled that the contractor could not be charged, under his guaranty, for a defect arising out of the plans rather than his workmanship. The agreement by the contractor to construct in accordance with the plans and specifications, played no part in this determination, as it did in the reasoning of the Court in the *Russ* case, first discussed above. An agreement to build in accordance with the owner's plans should not constitute the contractor's guaranty as a warranty of the sufficiency of such plans. Correspondingly, it would seem that a contractor's guaranty should not be limited to proper workmanship and materials where he has furnished the plans and specifications, and the owner relied upon the contractor.

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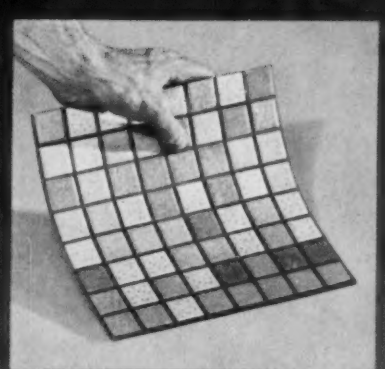

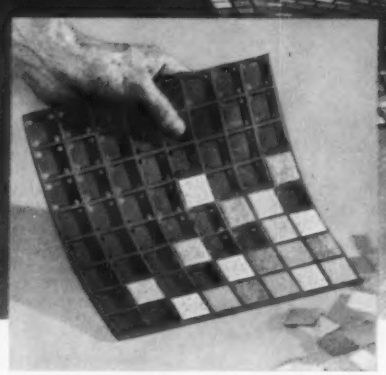

Plate No. 1099

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Large-Scale Planning to Human Scale

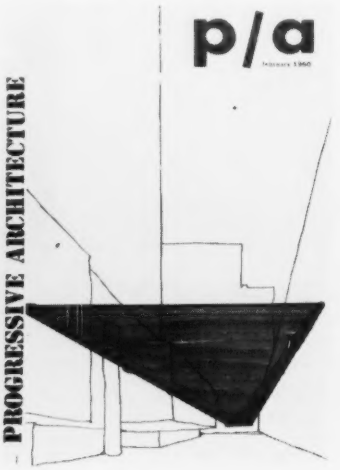
Dear Editor: Enclosed are four plates. *Plate 1* the February cover of P/A, as it was shown, may be captioned "The Inhumane City—Outdoor Rooms for Giants." *Plate 2* gives a comparison in scale by introducing the human element into the picture. *Plate 3* illustrates a method of integrating the human scale with the city and its large, unrelated structures, by providing easily recognizable elements (natural) which may enrich and further modulate the space formed by the architectural walls. In order for urban spaces to remain "human," there must be some relationship between the spaces and human functions, human dimensions, and human feelings. The caption of *Plate 3* might be "The Human Scale." *Plate 4* is a diagram, illustrating the method of overhead enclosure (used in *Plate 3*) as a means of relating the physical dimensions of the urbanite with the dimensions of the city artifacts.

I send this to you simply as an illustration of the paradox expressed in the February issue. The article, "Planning in South America," by Mrs. Moholy-Nagy makes this same point concerning Brasilia: an inhuman city plagued by constant states of incompletion, vast spaces and red dust. Side by side with this very sensitive observation, the example illustrated by the enclosed plates seems to manifest every "planning error" which Mrs. Moholy-Nagy brings forth in her article.

Congratulations for the very poignant insight into South American Planning; for shame, in illustrating "architecture to be viewed from without" vs. "architecture to be experienced from within" concepts.

JOHN B. FRAZIER
Assistant Professor
Michigan State University

The view of Place Ville Marie selected for the cover (above) *of* FEBRUARY 1960 P/A *is cited by a Michigan planner as illustrating a paradox—the creation of vast urban spaces for use of normal-size persons. His letter* (left) *was accompanied by the alternative suggestions shown here. It is followed by a reply from a spokesman for the architects of the Montreal redevelopment project.*



As exhibit for the defense, I offer Professor Frazier's *Plate 2*, into which he has happily brought not only the human but also the aviary element. No doubt he is hinting that Place Ville Marie is "for the birds." But I wonder if he hasn't inadvertently, shown it is for people—the regular, not the giant size. In point of fact, the "vast" space which he deplores is a little less than fifty feet in width, or narrower than a standard, city, side street.

Professor Frazier's *Plate 3* eloquently demonstrates exactly why we do not intend to plant trees in this area of Place Ville Marie.

HENRY N. COBB, Partner-in-Charge
I. M. Pei & Associates
New York, N. Y.

Pie in the Sky?

Dear Editor: By some odd chance, FEBRUARY, 1960 P/A seems to have brought out in me a latent—and hitherto unsuspected—bent toward the imagination of fantastic architecture. I am not even an architect, but the diametrical opposition of views expressed in the lead article and

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in the editorial (P.S.) of the same issue of P/A seemed to pose a problem that had to be resolved.

The article was by Jan C. Rowan. It was entitled "The Story of Place Ville Marie" and it described the I. M. Pei project for a 22-acre in the heart of Montreal. The editorial was by Thomas H. Creighton, and it referred to Grand Central City, "the world's largest commercial skyscraper; to be built in back of Grand Central Station."

The Rowan and Creighton statements point up the concern that many people in the field of city development feel about preserving or re-creating open spaces in the congested urban hearts, but the question is one of practicability. The land, it seems, is too vaulable.

My proposal for the solution to this problem (I say "my" proposal, but I am sure this is only a repetition of earlier statements) avoids the position taken by either side, for it seems to me that we should not worry about creating open spaces *on the ground*. What difference does it make if these great office towers have a little plaza in front? At the scale of this kind of city building, such plazas are mere postage stamps. The poor pedestrian down there can have no real sense of space, and in downtown Manhattan he cannot even see the sky from the plaza in front of the Chase-Manhattan Bank tower unless he gapes straight upward.

Where then shall we find open space and sky-filled vistas for the pedestrian among the closely-ranked skyscrapers? I suggest that we must look for them up in the air.

I do not know the answer to the question whether we must continue to increase the density of land use in the center of the metropolis. But if our economy rules that valuable land must be occupied by closely-spaced towers, and the resultant ground-level congestion makes the sidewalk untenable for the pedestrian, then the towers themselves must accommodate him in hanging plazas—with their shops, restaurants, and promenades—connected by graceful bridges from tower to tower. Up there he would find air, light, and vistas, and he would experience space as he never could on the ground.

Fantastic, impractical, straight out of Buck Rogers! Perhaps, but in the half-dozen of our greatest commercial centers this might ultimately be the best way to put man in space among his already fantastic structural creations.

JOSEPH M. HEIKOFF
Bureau of Community Planning
University of Illinois

Enlightened Urban Planning

Dear Editor: It has occurred to me that the superiority of your FEBRUARY 1960 P/A lies not merely in the handsome main feature and its lucid exposition, but rather in the balanced presentation of urban problems induced by your P.S. and by the closing paragraphs of Jan Rowan's lead article. The practicing professional needs to be more strongly reminded that these problems are whole ones which, for the sake of a viable future, must be perceived and solved as wholly as possible, and must not be taken out of social context. To solve only the architectural and financial aspects of an immediate building project is to conceal the price tag and the terms of the mortgage on an entire citizenry. In other words, the ledger has both a credit and a debit column, although it is usually only the credit side—the space, its cost, its returns—which is cited as an example of progress.

Sensible people favor an expanding economy, and most of them realize that the capitalist economy is capable of expansion. Accordingly, our great metropolitan areas will continue to experience accelerating increases in commerce, industry, and finance, in payrolls, and consequently in building. But a tremendous investment in these fields already exists and needs both integration into an ordered physical pattern and protection from upsetting and pre-empting accretions. Leaving aside the esthetic for the moment, urban resources are subject to exploitation and dissipation exactly in the same sense as is grass, timber, or water. A complete ledger would show that alongside of bumper wheat crops we must list the cost of dust bowls and the relief and migration of peoples. Alongside the throbbing sprawl of some cities we must list costly and detrimental changes in the air, the climate, and the health of the inhabitants. Alongside the bright, new architectural project must be listed the overloading of horizontal circulation and the exhausting effort and appropriations of public funds needed to stave off the breakdown of every type of municipal service.

The layman is well aware of the inconvenience, the delay, and the frustration which confronts him daily as he attempts to get around the city. He may be vaguely aware that part of his tax dollar goes to build, improve, regulate, guard, and maintain his roads and bridges and to varying degrees his mass transportation. But he is not aware of the degree to which his taxes and his frustrations will be affected by new building projects. In this sense many building permits are blank checks to be drawn against the public account.

Over and above the careful economic analysis which usually accompanies an individual building program, it would be both honest and useful to present a broader balance sheet showing the increase in urban economic opportunity on the credit side, and the public costs to maintain it on the other. This is the concern of the urban community and, more to the point, of those who profess to be its experts, leaders, or representatives. If the red ink is visible even through rose-colored glasses, then society is either unwilling to finance its own future, or it is being exploited. In either case, a program of gathering facts and disseminating information is needed in anticipation of the ideal exercise of public authority and responsibility. The responsibility is required for the support of optimum economic expansion; the authority is necessary to guard against exploitation in the process.

It is my feeling that P/A has opened this subject, and my hope that it will be increasingly examined. City planning is capable of establishing the norms needed to measure the desirability of a building proposal from the above viewpoint and, were this accomplished, it would become apparent that certain projects because of their size or location were simply insupportable. The implied, ultimate balance of permitted densities with the public cost of servicing is an issue which has been continuously postponed, perhaps because the appropriate governing bodies are not backed by an informed and responsible opinion.

Perhaps the only available influence is one of censure. Yet even censure, like other forms of regulation and control, is reinforced by a broad base of human understanding and sensitivity. General education, strengthened over many years, might be capable of achieving a useful proportion of both. With a quick glance backward to what the brute man was, we can claim the readiness and ability to work toward these ends. The will alone lags behind.

ANTHONY ELLNER, JR.
Syosset, N.Y.

Another Category?

Dear Editor: Aren't you a little weary of giving top awards to Urban Renewal projects? Perhaps you should have two categories.

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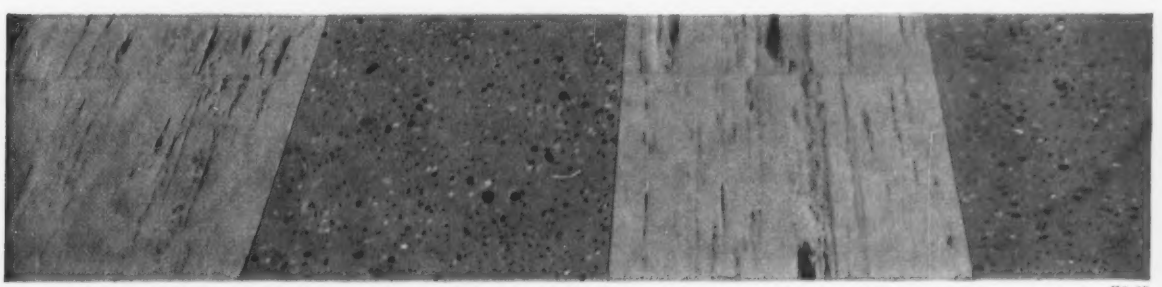

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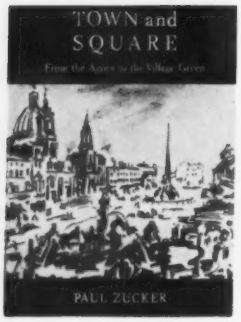

Strict Adherence to Ideological Framework

BY LEONARD K. EATON

Assistant Professor of Architectural History, College of Architecture and Design, University of Michigan, terms provocative Town and Square: From the Agora to the Village Green. *Paul Zucker. Columbia University Press, 2960 Broadway, New York, N. Y., 1959. 287 pp., illus. $15*

This volume, a comprehensive survey of the square as a spatial form in urban design, pulls together an immense amount of material which should be of interest to students of history and to contemporary architects and planners. Rightly observing that today we too often neglect the square in our city plans, Professor Zucker makes a strong case for it as a powerful humanizing element. The book is obviously the product of many years of research and contains an exhaustive bibliography. This reviewer is, therefore, sad to report that it is weakened by strict adherence to an ideological framework which leads to some very strange interpretations of history. Hence it will supplement rather than replace earlier works in the field by Lavedan Gantner, Mumford, Giedion, and others. Unquestionably, however, it is an extremely provocative work and is likely to lead to some lively discussions on both sides of the Atlantic.

The book may best be approached by analyzing two polarities which run through it like a pair of Wagnerian leitmotifs. These are: (1) Mediterranean vs. North European spatial feeling, and (2) geometric vs. irregular form. With regard to the first, Professor Zucker contends that the Mediterranean peoples have from ancient times been endowed with a superior spatial sense. "The abundance of squares in Italy and France," he observes, "may be explained by a combination of climatic conditions and temperamental attitudes characteristic of the Romance peoples of southern and western Europe. These conditions led to a form of public life—and life in public—which made street and square the natural locale for community activities and representation." In this attitude he is much like the late Bernard Berenson, who commented that everything which civilizes Europe comes from the shores of the Mediterranean.

Zucker's second difficulty involves an unfortunately narrow definition of the concept of planning. He tends to view the creation of a great square as being largely a matter of the arrangement of ordered, geometric forms. He is therefore happiest in those historical periods which loved grand axes and carefully arranged sequences of vistas; he tends to disregard the planning achievements of those eras which have not stressed geometric form and axial schemes. Thus we find him remarking rather disparingly that London squares of the 18th Century ". . . are always closed entities, without any spatial relationship among them: no connecting axis, no angular grouping, no vista planned from one to another or into the neighboring quarter." In similar fashion Zucker fails to evaluate medieval planning achievements properly, at one point going so far as to maintain that "this idea of conscious planning for the town as a whole or for a specific square was completely alien to medieval man except in the 13th Century foundation in France and Germany." It is true that the planners of medieval squares did not treasure geometric forms and dramatic gestures as did the men of the baroque, but they were genuine planners nonetheless. Hundreds of visitors over the centuries have attested to the success of their efforts. No less an authority than Eliel Saarinen wrote: "Every new building was fitted into the site like a piece of stone into the mosaic pattern. In this organic manner the medieval town was formed into a complexity of spatial effects." (*The City*, p. 52.) No testimony could be more compelling.

With these preconceptions, it is natural for Professor Zucker to see the Greek agora as the first true square in the urban culture of the West. In this connection it is interesting to note that, although obviously familiar with all relevant archeological publications, he refuses to grant any spatial quality to the Athenian Acropolis. It was, he contends, not a place for public assembly but a ceremonial area used only on special occasions. The buildings were sited with the Pan-Athenaic procession in mind, and hence do not possess any real spatial relationship. One glance at the map will show the space blindness and volume consciousness of the builders. "Volume," incidentally, serves Zucker as a catch-all word to characterize all these urban open areas which, he feels, do not possess true spatial quality. It is not surprising that he sees the ancient Romans as the first

Continued on page 211

London. St. James's Square in 1773.

Rome. Fontana di Trevi.

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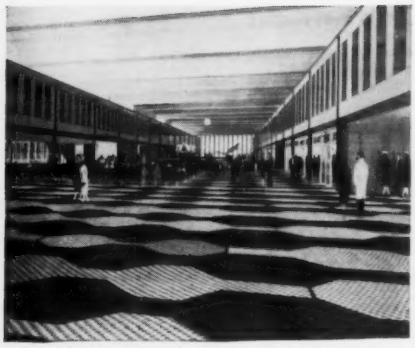

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Continued from page 208

great masters of the square in Western history and that he devotes many pages to the Imperial fora. Here again his mastery of all recent archeological data is undeniable.

Given his preconceptions, Zucker's chapter on medieval towns and squares is bound to be rather uneven. Thus he views the famous Piazza del Campo of Siena as an example of the surviving Latin space-consciousness in Italy, while the settings of the monumental buildings in Hanseatic cities such as Bremen, Stralsund, and Rostock, tend to be dismissed as irregular volumes. Here Zucker differs with Karl Gruber, who sees them as spatial creations of a high order, and also with Wolfgang Braunfels, who has documented the remarkable degree of planning consciousness in medieval Tuscan cities. It is likewise hard to agree that the beautiful English collegiate squares "cannot even be considered as genuine squares, functionally or sociologically" because they were closed off from public traffic and destined only for pedestrians. Most historians would grant the collegiate squares of Oxford and Cambridge a high place among the planning accomplishments of the Middle Ages.

Professor Zucker makes his greatest contribution in his lengthy chapter on Italian and French towns and squares in the 17th and 18th Centuries. Here he extends Heinrich Wolfflin's analysis of the baroque style in a fascinating manner. Wolfflin claimed that dramatization and movement were unifying characteristics in the work of the period, and Zucker is able to show their presence in the great Roman squares most convincingly. To the contrapuntal organization of space represented by the Piazza Navona and the Piazza di Spagna he opposes the classicizing tradition of the French "Places Royales," and here, too, his theorizing is most persuasive. Beginning with the seminal Place des Vosges he demonstrates the basic continuity of French planning during these centuries; an appropriate quotation from Arthur Koestler's *The Age of Longing* caps his analysis of the Place de la Concorde. English and German town planning schemes of the 18th Century come in for minor attention.

The major criticism of this impressive book must, then, be its use of an unnecessarily rigid intellectual frame of reference. Bewitched by his enchanting polarity of northern vs. southern European "formgefuhl" Zucker maintains that

Continued on page 214

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Continued from page 211

Holland in the 17th Century did not create any monumental solutions in town planning because of the northern climate and the strong emphasis on domestic life. The truth of the matter is that, despite the climate and the domesticity, Dutch political life at this period was exceedingly turbulent. Moreover, much of it took place in the open air. The Dutch chopped off the head of their greatest statesman, Oldenbarnevelt, in the great square at the Hague, and this space was also the scene of many other equally important but less sanguinary gatherings. As long ago as 1914 Max Eisler demonstrated the wealth of significant spatial relationships to be found in a single Dutch city, Haarlem. More recently Gerald Burke has confirmed Eisler's analysis in his excellent *The Making of Dutch Towns.*

For like reasons Zucker is extremely hard on English contributions to urban form. England, he writes, was almost immune to the splendor of French building and planning, ". . . since through all periods of her history England had never developed any true feeling for space in architecture." This is a little rough on the nation which created the choir at Gloucester Cathedral and the octagon at Ely. It is only fair to add that Zucker makes an exception in favor of the John Wood's planning schemes at Bath. He rates their combination of circuses and crescents very highly, comparing the total effect to the one achieved in Hellenistic times at Pergamum. On the whole, however, we must conclude that reliance on a dualism such as Mediterranean vs. Northern European spatial feeling can lead to all sorts of pitfalls for the art historian.

A word should be said about the concluding chapter on "Early American Public Squares" by Carl Feiss. While urban development in the United States differs basically from the European, our early settlers still made extensive use of squares as social nuclei in their first towns. Mr. Feiss's assessment of the various kinds of civic open space in early American planning history is extremely judicious and makes one wish for a longer treatment. His evaluation of the New England village green as a unique American contribution to urban design is particularly striking. We are in great need of a competent study of the green; its quaintness has been amply demonstrated in tourist guidebooks.

While *Town and Square* is copiously illustrated, the graphic material will probably appeal more to the student of history than to the practicing architect and planner. In most cases the author gives us an aerial view and a plan of the particular square he is writing about. There is a lack of the coverage in depth which we find in Giedion, in Kidder Smith's *Italy Builds,* or in Thomas Sharp's *Oxford Replanned.* It might have been wise to deal with a few of the most important squares more intensively.

The Long-Awaited Revolution?

Design and the Production of Housing. *Burnham Kelly. (Action Series) McGraw-Hill Book Co., Inc., 330 W. 42 St., New York, N.Y., 1959. 401 pp., illus. $10*

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Continued on page 216

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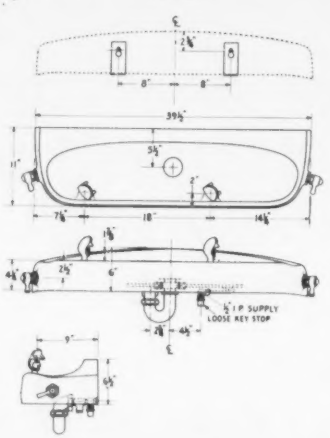

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Continued from page 214

phases of the subject have been published in seven volumes with the general title, "Housing and Community Development," and under the general editorship of Martin Meyerson of Harvard University.

Design and the Production of Housing, one of the ACTION series, is concerned only with new, single-family houses. It is the product of a team of experts at Massachusetts Institute of Technology, headed by Burnham Kelly, and including Architects Carl Koch and Bernard Spring, Engineers Albert Dietz and James Murray, Economists Castle Day and John Dunlop, and Landscape Architect Hideo Sasaki.

House building has long fascinated the historians because it was seemingly bypassed by the industrial revolution and remains today essentially a handicraft industry. Having chosen the low road of evolution rather than the high road of revolution, house building has plodded along steadily. Its progress has been considerable, but the slow rate of improvement has exasperated many people. For half a century now, the industry has been stubbornly resisting the efforts of reformers to rationalize it and bring it into line with the rest of our mass-production technology.

This book examines the house-building industry as it exists today, with special attention to recent trends. Careful consideration is given to the many interrelated obstacles that oppose any significant innovation. Finally, convincing evidence is presented that a revolutionary change is about to take place. This reviewer would be derelict in his duty if he failed to note that equally convincing arguments to the same effect were offered in the 1930's and 1940's. However, the change is bound to come, sooner or later, and perhaps this time the prophecy will be realized.

The basic facts about housing are impressive. It is the largest single item in our national wealth. The 55 million existing units are valued at more than $300 billions, which is twice as much as the combined assets of the country's 500 largest manufacturing companies. More than 20% of our annual capital expenditure is for new housing, but this adds only 3% to the existing supply. New residential construction, now running at about $16 billions per year, is expected to rise to $23 billions by 1970. More than a million new dwelling units have been started every year since 1948, and of this, almost 90% was single-family housing (and only 3½% was public housing). This production occupied a labor force of 2½ millions, of which about half worked at the site.

Significant trends in the production of houses during the last decade are:
1 Marked increase in the size of builders and their developments.
2 Increasing use of prefabrication.
3 Growth of government controls by subdivision regulation and zoning.
4 First appearance of the shortage of building land, now expected to become critical during the present decade.
5 Striking increase (50%) in the size of the average house.
6 Greater use of mobile units as permanent housing.

The first of these trends is considered by the authors to be the most significant for the coming revolution in the design and production of housing. Only the new giants in the field will have the resources to conduct research and to combat the many obstacles blocking any important innovation.

The most startling disclosure in the book, for most readers, will be the data

Continued on page 224

WHEN YOU SPECIFY dumbwaiters

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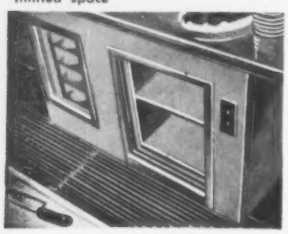

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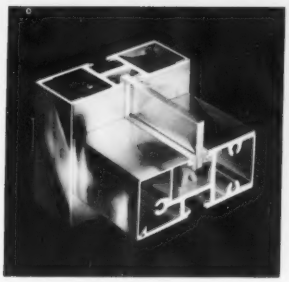

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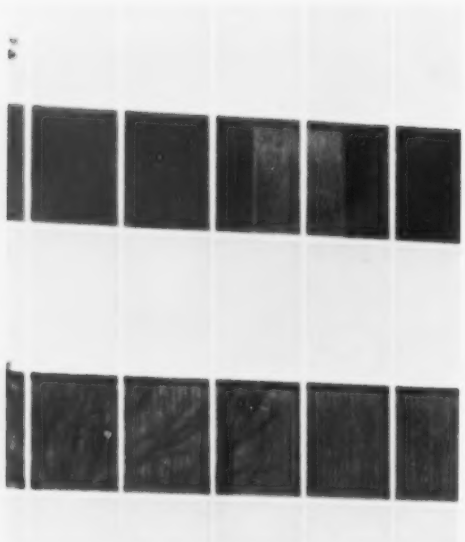

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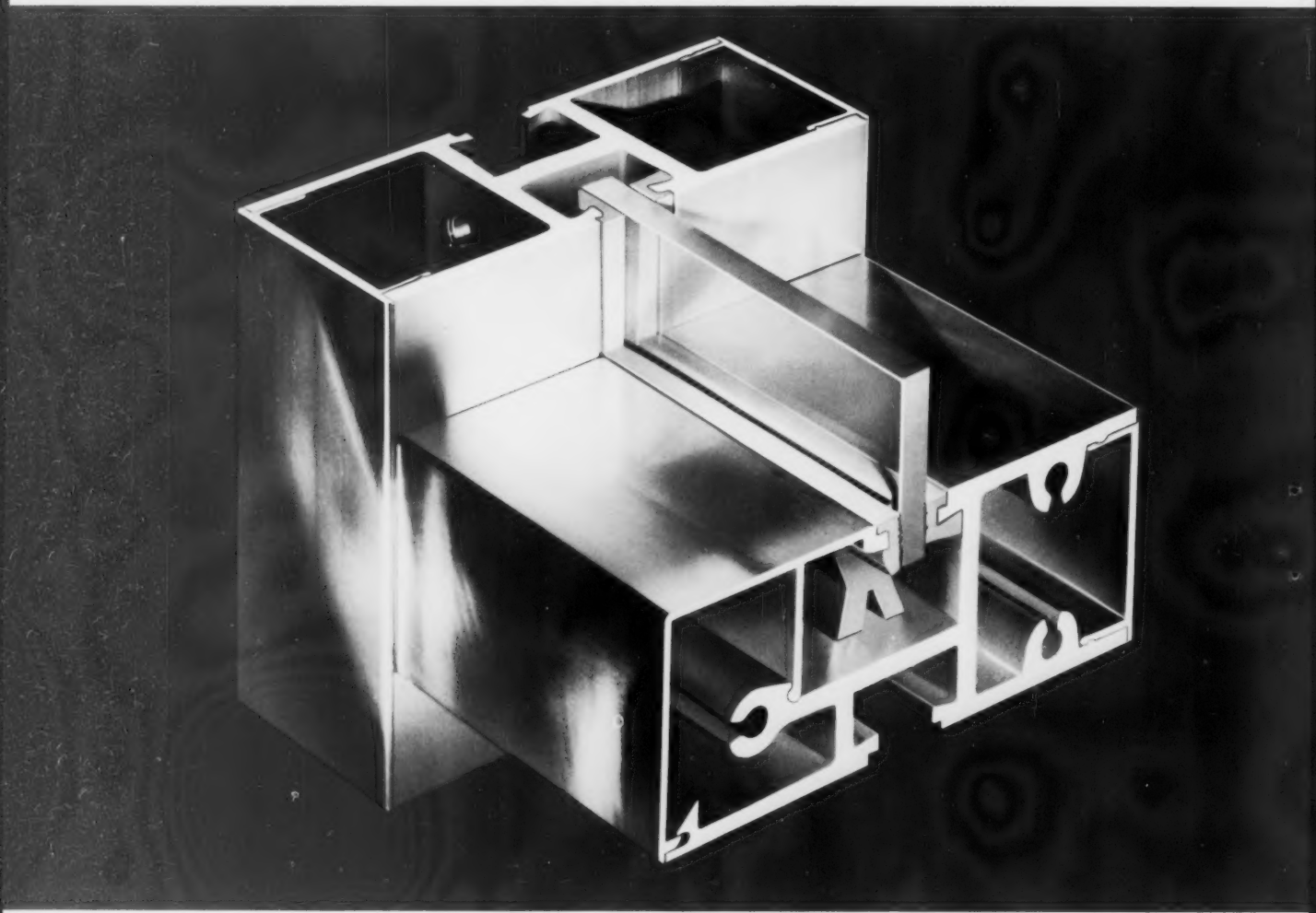

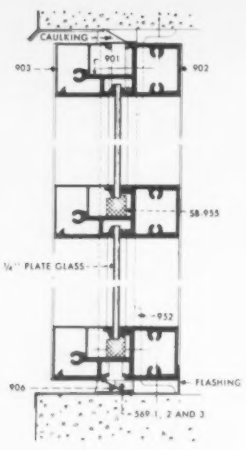

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Continued from page 216

on "mobile-home" production. House-trailers, as we used to call them, have outsold prefabricated houses every year since 1945, and now account for more than 10% of all new housing production. Of the more than two million trailer dwellers, it is estimated that only 4% are vacationers and 10% are retired couples. The rest are all employed, often in semi-migratory occupations such as construction work or military service, and in most cases have deliberately chosen trailers in preference to other forms of housing. When they move, they sell their trailers and buy a new one at their next station. Trailers have grown enormously (they are now up to 10′x50′) and are infrequently moved; when they *are* moved, a truck or tractor does the job, not the family car. The real secret of the popularity of the trailer is probably best expressed in the authors' phrase "minimum-involvement housing."

Noting the marked increase since World War II in the size and equipment of the average house, with a corresponding increase in its price, the authors conclude that the coming rationalization of the industry will probably result in an improved product rather than a reduced price. It seems to this reviewer that they may be making the same mistake that American automobile manufacturers made in assuming that few people really wanted a smaller and cheaper car. Perhaps the mobile-house (at half the size and half the cost) is the Volkswagen of housing, and should be taken more seriously by the rest of the industry.

Although "design" is the first word in the title of the book, only two of the ten chapters are devoted to this subject. (The others concern the housing industry in general, land development, fabrication methods, recent advances, research, labor, government controls, and the future.) These two chapters, however, are of exceptional interest; the following quotations may serve to give the flavor:

". . . design means the creative process by which—on the basis of insight into the way of life of those who will live in the house and understanding of the entire process by which houses are produced—one visualizes patterns and forms that have not previously existed. Only when he succeeds in achieving both a high level of satisfaction and a high degree of economy of total resources does a designer serve his function.

"Necessarily this implies the right if not the duty to innovate."

". . . houses are . . . complex summations of space and service, individual satisfactions and social relationships, tangibles and intangibles, technology and art."

"The combination of genuine design ability and a sensitive understanding of the housing industry is rare, and almost nowhere is it being taught."

"Effective design . . . links analyses of all aspects of the production and distribution process to the creation of expressive form."

"A . . . design for the future would be a creative synthesis of many factors: planning for use and flexibility; visual quality in terms of form, scale, and expression of materials; techniques of structural analysis; materials technology; fabrication processes; handling operations; erection processes; integration of environmental controls; marketing and financing procedures; and legal controls."

Modern industry is a firm believer in research. The backwardness of the house-building industry is shown by the dearth of research in that field. Only the most highly industrialized members of

Continued on page 228

more . . .

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Architect:
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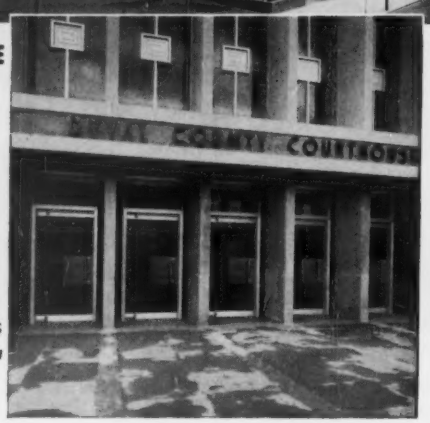

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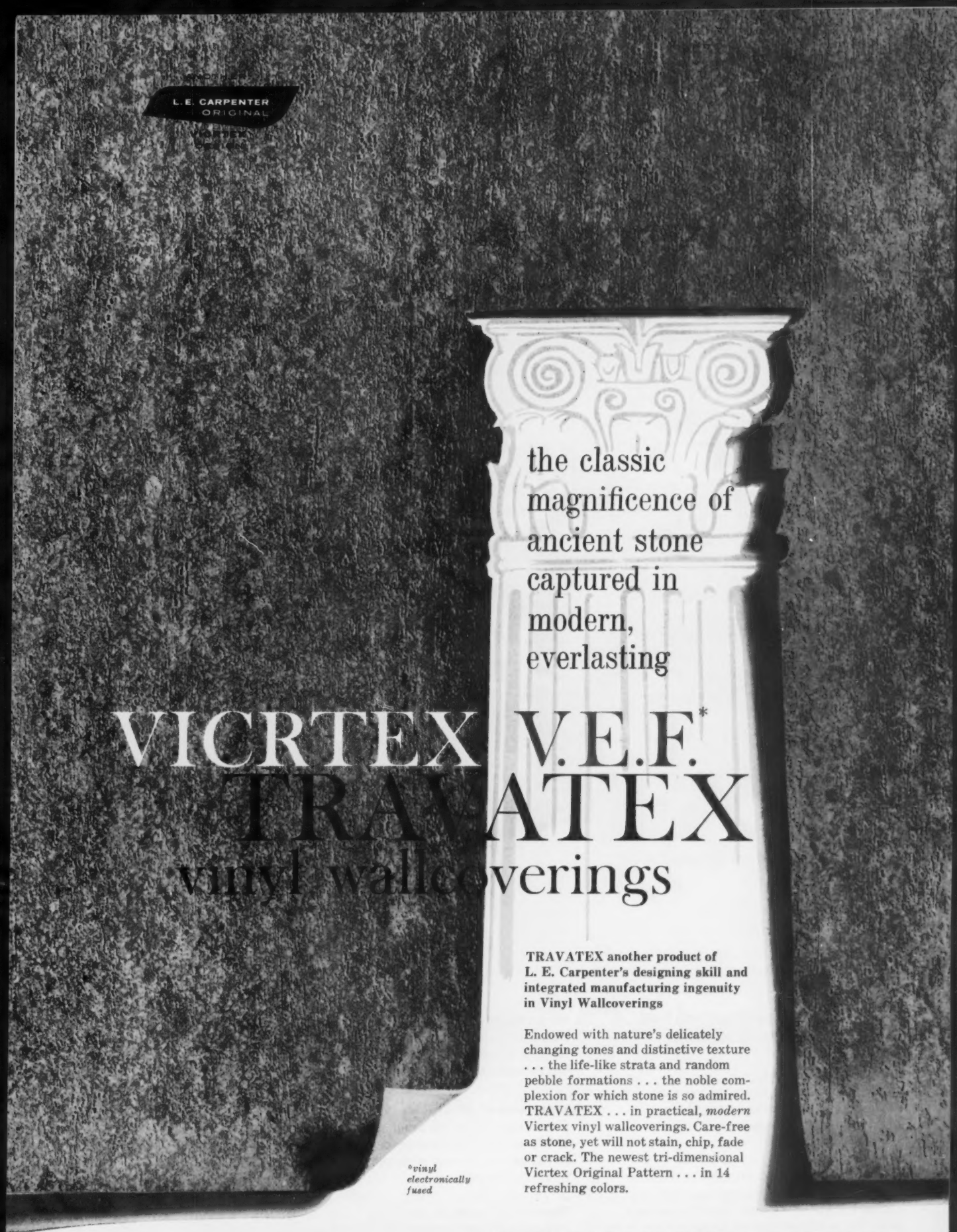

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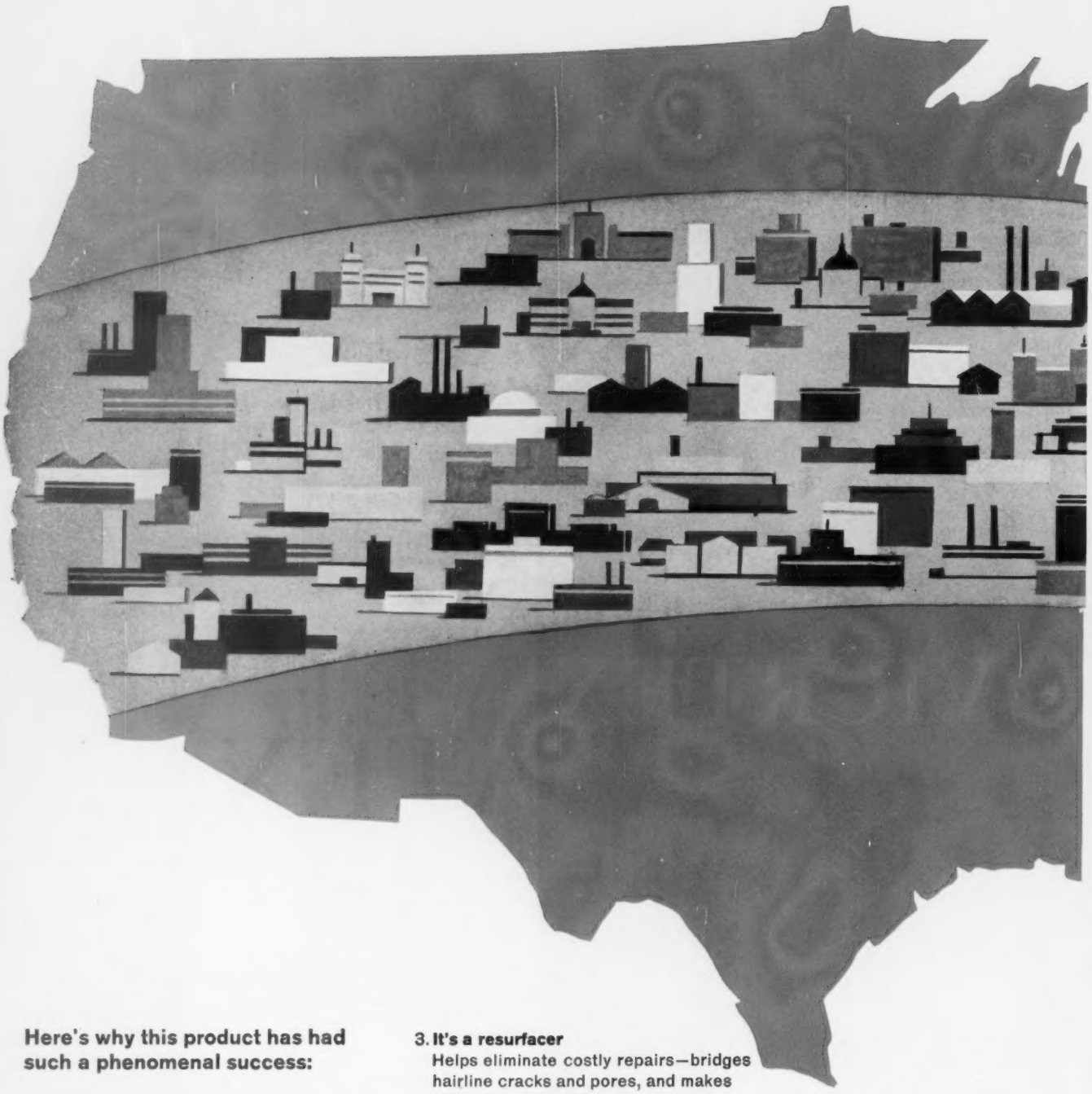

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Continued from page 224

the industry—the manufacturers of building materials—perform any significant amount of research, but their work is, naturally, largely confined to their own products. A smattering of research is carried out by the Federal Government, some universities and foundations, and a few professional and trade associations. Nowhere is there a major and continuing research program on the entire subject. Equal in importance to this need for research in the main subject is the need for correlation of such research as is being performed. A central agency such as the Bouwcentrum in Amsterdam, for the correlation of housing research and the dissemination of information to the industry and the public, is strongly recommended by the authors, and seconded by this reviewer.

JOHN HANCOCK CALLENDER
Architect, Educator, Author
New York, N. Y.

Return to an Old Vocabulary

Symbolism in Liturgical Art. *LeRoy Appleton and Stephen Bridges. Charles Scribner's Sons, 597 Fifth Ave., New York 17, N.Y., 1959. 120 pp., illus. $3.50*

This handbook-size volume on symbolism will, I think, fill a large gap in any architectural library. In this era of the "signboard cross"—used to identify most unchurchly buildings—it will add substance to the shallow, almost non-existent vocabulary of expression in the liturgical arts.

The text is direct and free from sentimentality in its work-a-day approach to the source material of religious symbolism. Enough historical and biblical background is provided to make the book authoritative and convincing, and a well-organized index makes it easy to use. Illustrations are beautifully drawn with a crisp, calligraphic quality, unhappily divorced from the media the architect may use in expressing them, but providing all of the elements of the symbol, per se.

A timely and penetrating essay by Maurice Lavanoux gives a challenging introduction to the subject.

JAMES M. HUNTER, FAIA
Boulder, Colo.

Vision of the Future

Architektur, Automation, Atom. *Dipl. Ing. Dr. techn. Kurt Auckenthaler. Band 16, Schriftenreihe der O.o. Landesbaudirektion, Linz, Austria, 1959. 293 pp., illus.*

A compilation of articles concerning the problems of contemporary building, covering everything from "Die vier grossen Revolutionen" (scientific, technical, social, and psychological) to "Atom-Technik und Architektur," compounds rather than clarifies the already complex topics. The German text, more obscure than ever in Auckenthaler's hands, does not help matters. Illustrations are mostly in rough sketch form, gathered from various sources. Auckenthaler's own visions of architectural things to come make one believe that the "dämonische" age is truly upon us.

ILSE MEISSNER REESE
Forest Hills, N. Y.

Incomplete Product Survey

Decorative Art 1959-60. The Studio Year Book of Furnishing & Decoration. *Edited by Henry Fuller. The Studio Publications Inc., c/o The Viking Press Inc., 625 Madison Ave., New York 22, N.Y., 1959. 147 pp., illus. $8.95*

This review of furnishing and decoration is offered by its London publisher as "a unique opportunity of studying 'design for living' throughout the world." The

Continued on page 230

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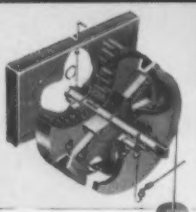

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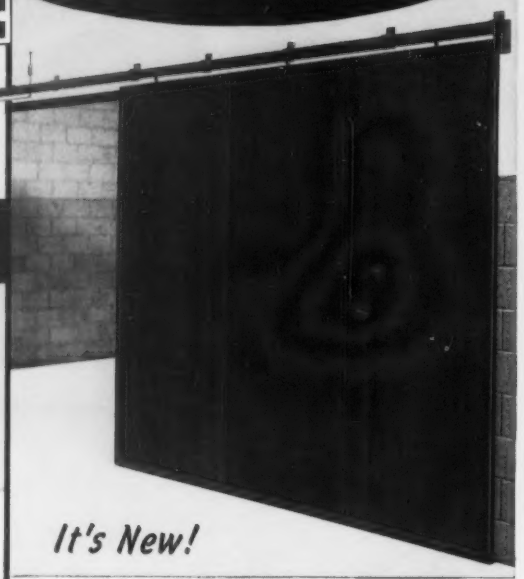

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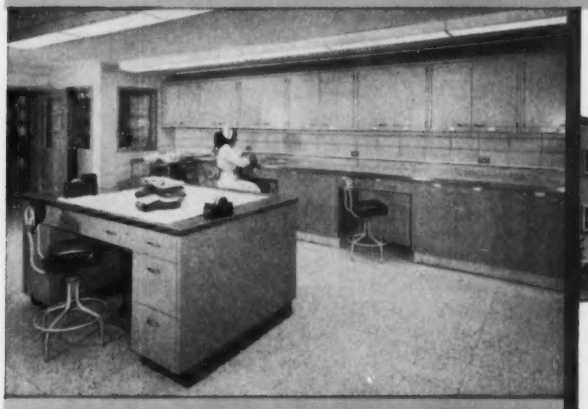

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Continued from page 228

book is profusely illustrated, and, indeed, consists chiefly of more than 400 illustrations (with 14 color pages) showing interiors and furniture; tableware and silver; textiles—prints and weaves, carpets and rugs, wall hangings; glassware; ceramics and metals; and light fittings.

Though certain sections show fine work—ceramics, for instance—selectivity disappears in other sections. The two weakest are 'Furniture' (many mediocre pieces are included and the most glaring omission is Eero Saarinen's important pedestal furniture) and 'Houses and Apartments' (with not a single plan shown).

B.J.M.

Guide to Michigan's Wrightiana

Frank Lloyd Wright. AIA Monthly Bulletin, December 1959. *Michigan Society of Architects, 120 Madison Ave., Detroit 26, Mich., 1959. 64 pp., illus. $.50*

A memorial issue devoted to the homes of Frank Lloyd Wright in Michigan will be of interest to all who have observed the work of the late master, either through published material or actual visits. Plans, photographs, and precise locations of many of the homes are included in a 16-page gravure section; all 33 homes are documented in a complete listing.

E.P.

The Remains of an Empire

Apulia: Imperial Splendor in Southern Italy. *Carl A. Willemsen and Dagmar Odenthal. Frederick A. Praeger, 15 W. 47 St., New York 36, N.Y., 1960. 257 pp., illus. $12.50*

To the contemporary traveler, Southern Italy—of which Apulia forms a part—is a place to be traversed but not to be visited. It is an area associated with poverty, backwardness, and dirt. Most travelers would be surprised to learn that some centuries ago Apulia was one of the proudest possessions of Frederick II of Hohenzollern who not only ruled over most of Italy but, as Holy Roman Emperor, also controlled most of Germany.

Frederick II was almost the last of a line of Norman and German rulers who had ruled Apulia for some two centuries. In these two hundred years, Apulia seemed one of the leading areas of its day. The result of the prince's power, and of the Imperial title held by Fred-

Continued on page 236

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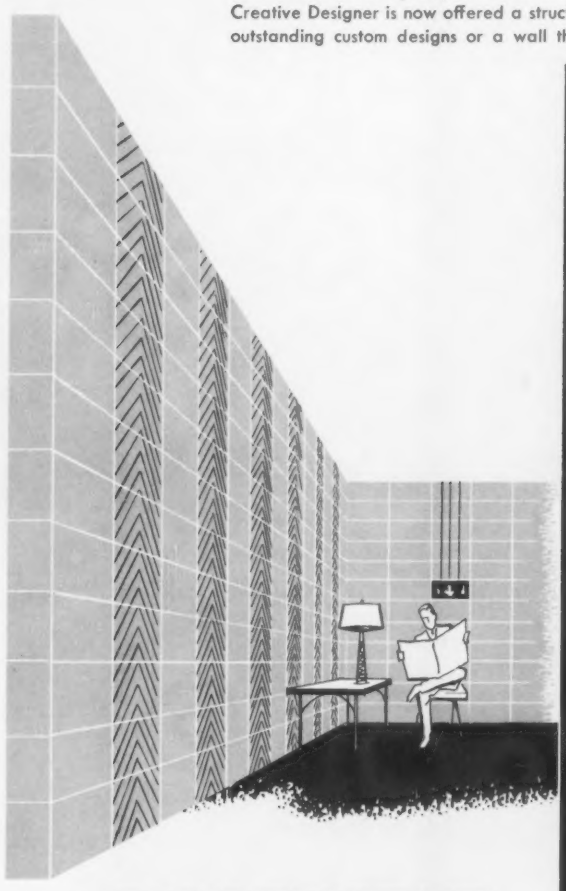

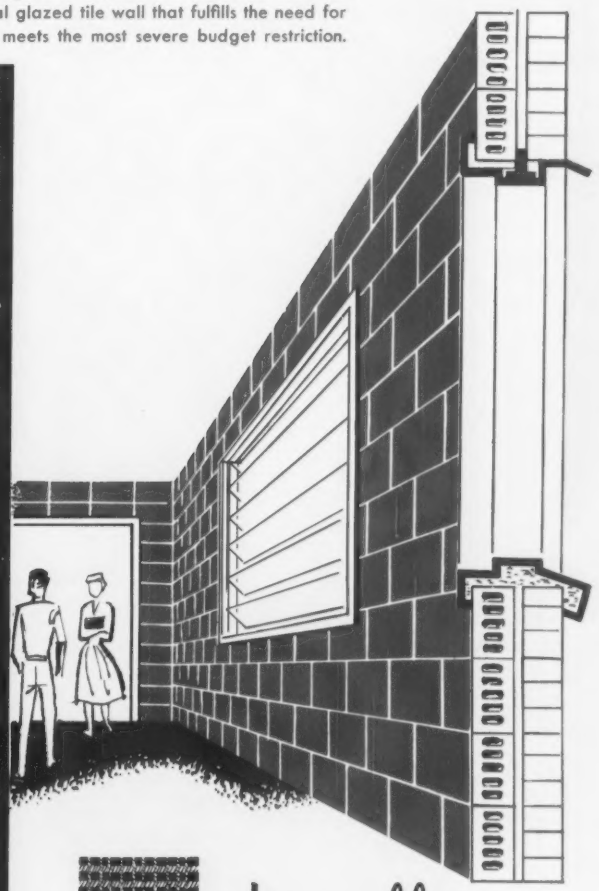

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REINHOLD PRESENTS

Shopping Towns USA

The Planning of Shopping Centers

by Victor Gruen and Larry Smith

Homo americanus suburbanus et automobilensis is getting out and walking, and liking it. Merchants are liking it, too. Shopping center owners are liking it, three. From four, five and six on, everybody who has been bemoaning the fate of communityless modern man now sees that shopping centers are the answer-to-it-all.

Naturally there will be lots more shopping centers built and lots more architects dreaming up charming pedestrian walks, cantilevered extravaganzas—in short, the full, frolicsome ambiance of the modern shopping town.

The authors of *Shopping Towns USA* appreciate your imagination and idealism. They have written this book, however, to cover all the practical problems that confront you. How far to proceed lacking proper zoning . . . how to help city officials justify a new public approach . . . how to achieve a balance of tenants that will satisfy the credit qualifications of investors and still yield good percentage returns over guaranteed rent . . . how to present the case for art in a selling environment.

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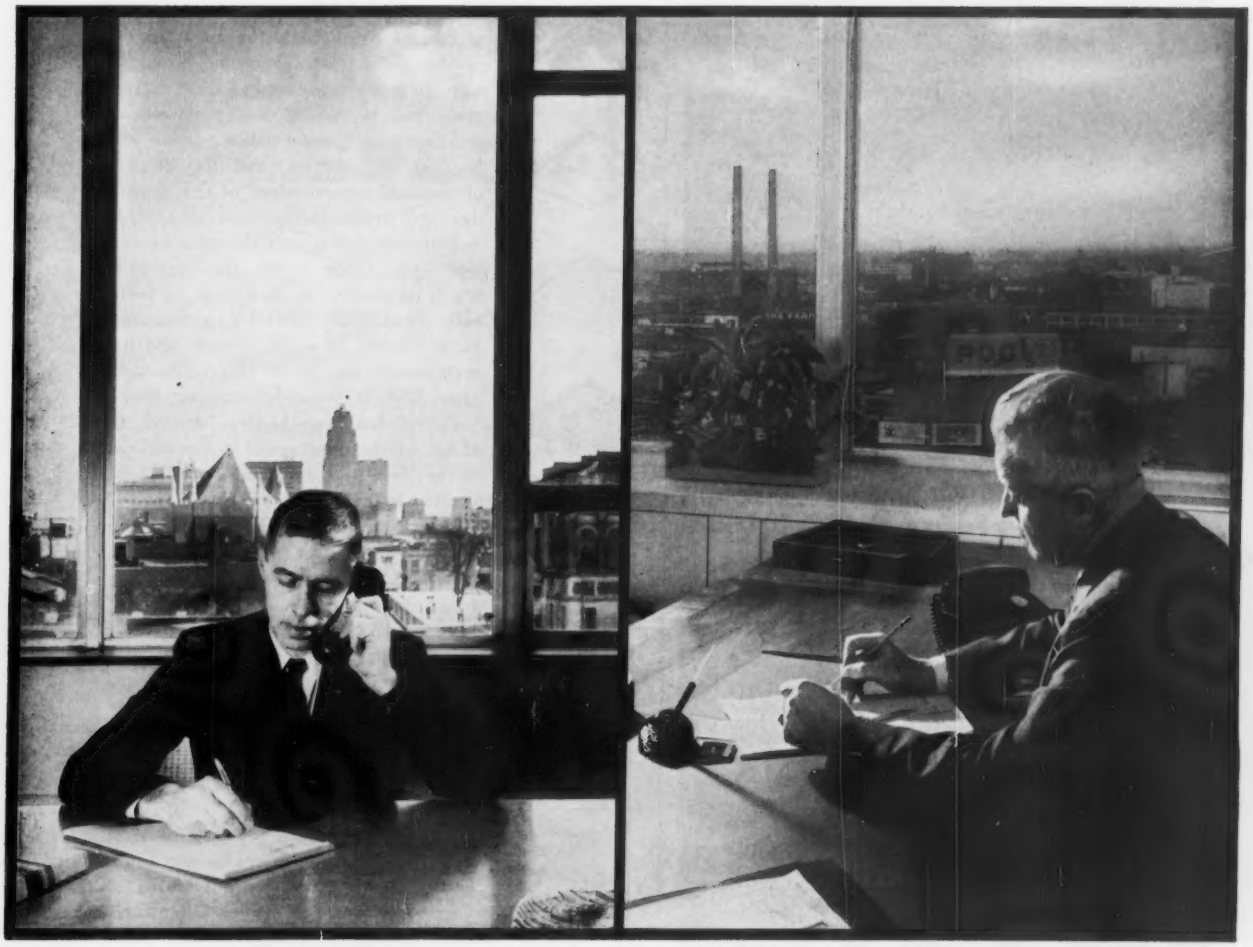

Heat Absorbing Plate Glass as the outer pane of *Thermopane* adds year-round comfort for tenants at 1600 Madison Avenue, Toledo, Ohio. Architects: Bellman, Gillett & Richards, Toledo.

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Continued from page 230

erick, was a large-scale building program whose remains still bear testimony to what once existed.

Apulian architecture of the period from 1050 to 1250 is to some degree unique. Its basic character is similar to that of Northern European architecture of the period. The rulers brought with them the traditions of their native areas but in Apulia this architecture underwent a transformation. Local influences, the climate, and the impact of classical antiquity and of the Byzantine and Arabic civilizations, all tended to humanize and lighten the more severe traditions of the north. The synthesis which ultimately emerged is, at its best, fully equal to the best of its component parts. Despite its merits, Apulia and its architecture was to be largely ignored after 1250. It became a stagnant backwater of European history, studied, if at all, by those interested in the history of the Holy Roman Empire, and largely ignored by English authors.

This book brings Apulia alive for the reader. In Professor Willemsen of Bonn University and Dr. Odenthal, Apulia has found articulate champions. A concise introduction acquaints the reader with some of the key historical, political, and architectural factors in Apulian history; then the authors let Apulia speak for itself. A series of 231 photographs, superb in their clarity and composition, records what is still left of the former Imperial grandeur.

In many instances, the record is a depressing one. The secular buildings, castles, hunting lodges, Imperial residences, have fared badly. Often only ruins remain. At best, there still exists the shell of a building. The mosaics, the marbles, the sculptures, not to mention the wooden galleries, have either fallen victim to time and neglect or else to the cupidity of vandals. The buildings have been stripped of what could be carried away and their ornamentation defaced. Despite their impoverished state, such edifices as the octagonal "Castel del Monte," Frederick's masterpiece, still impress the beholder. The interplay of building and site, of light and shadow, the handling of mass, and the soaring vaults, make the buildings—ruined or not—architectural creations of a high order.

The Apulian religious edifices have fared better. The ravages here are mostly those of time and of 17th and 18th Century modernization programs. Much of the ornamentation and sculpture of

Continued on page 240

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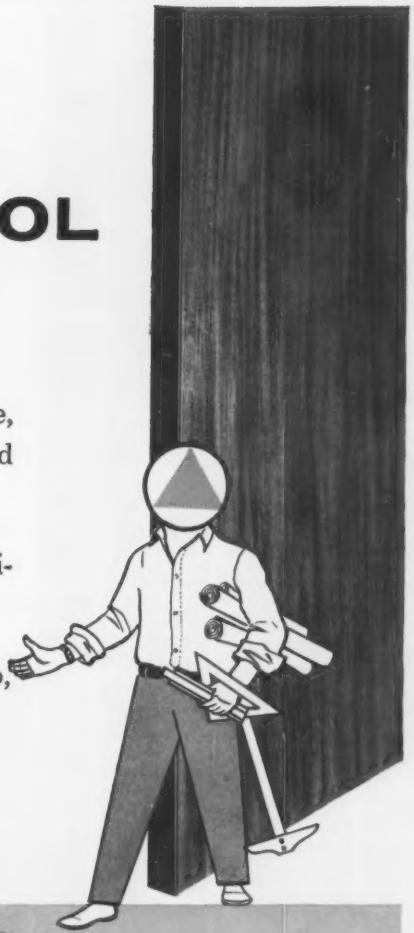

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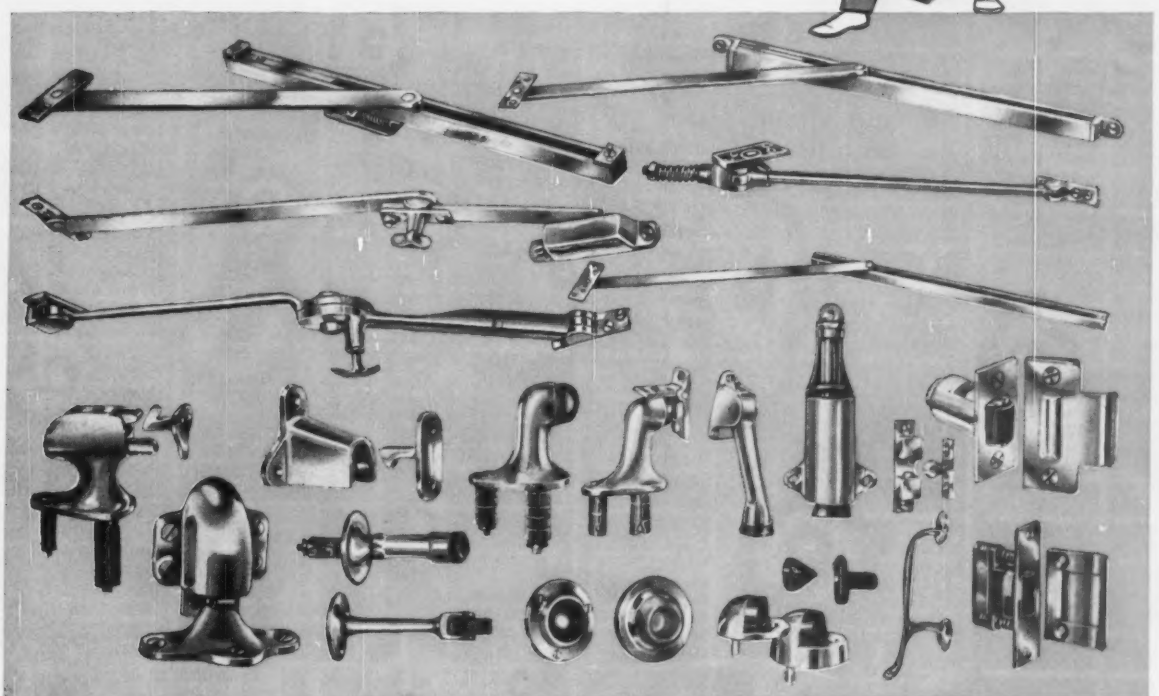

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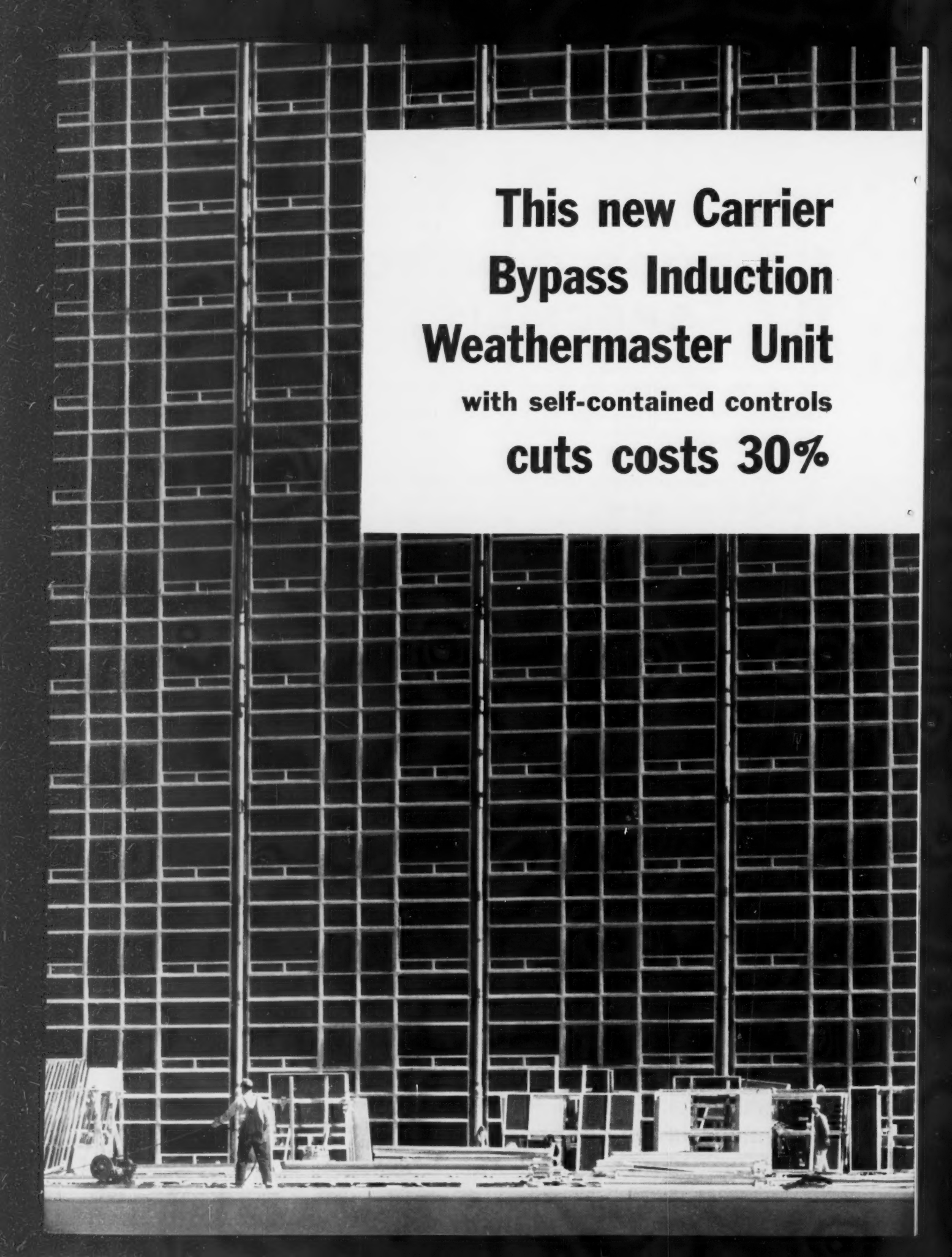

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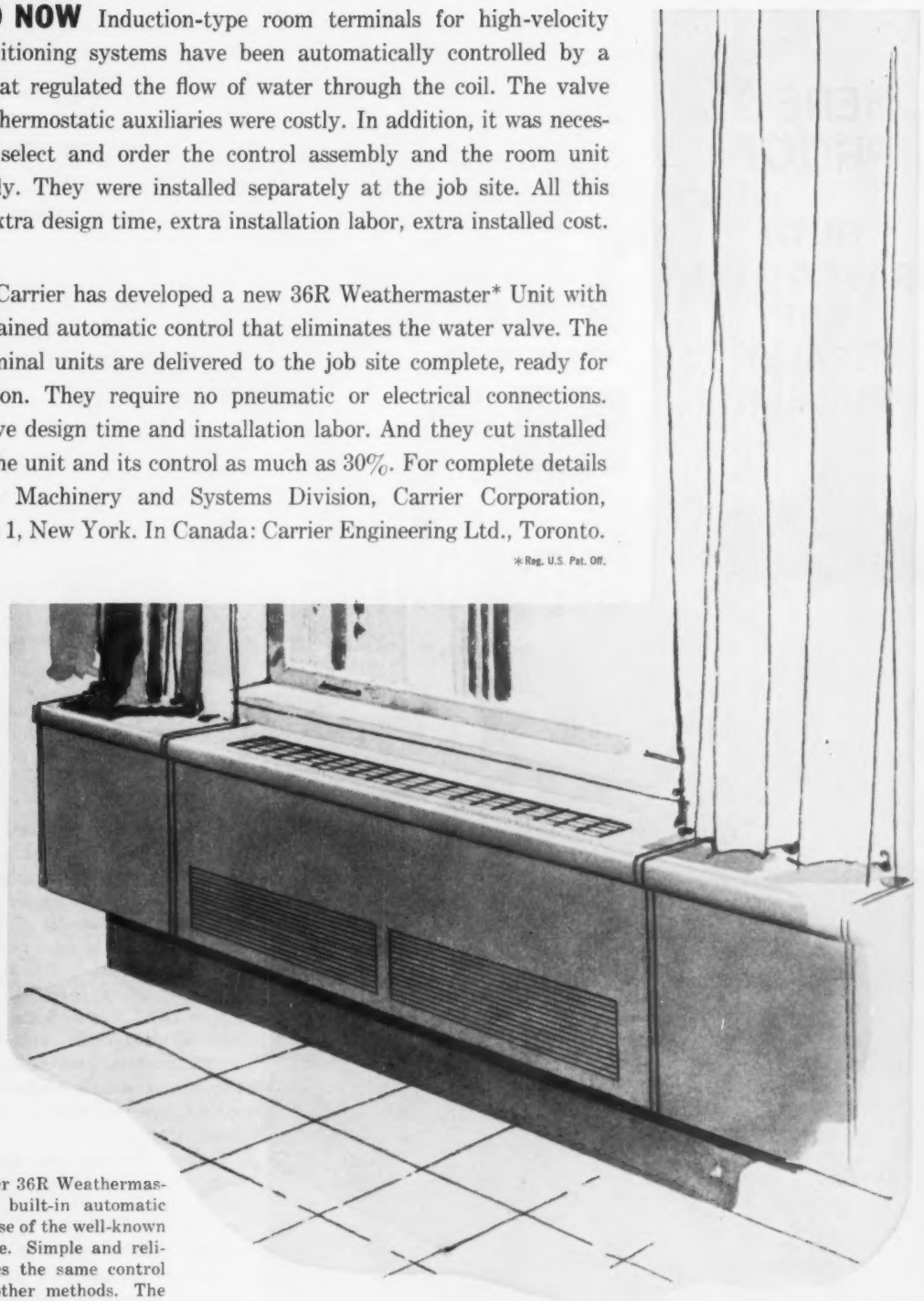

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Continued from page 236

the churches have survived. As a group, the cathedrals at Bari, Troia, and Trani still show the happy fusion of the Norman with the Byzantine and Arabic; for example, at Lecce one is treated to the unexpected but pleasing sight of a Moslem cupola surmounting a Romanesque building. At Otranto there still survives one of the great artistic masterpieces of the 12th Century, a mosaic floor. All of these the authors have included in this volume.

For the historian as well as for the architect, Apulia is a fascinating field of study to which this book supplies a happy introduction. Some readers will feel that the book is superficial, owing to the very conciseness of the authors' introduction. Others will regret that the pictures have been separated from their captions, the latter being compiled as a special section in the back of the volume. Still others will bemoan the lack of color photographs, but every reader will be stirred and enchanted by Apulia's legacy.

DR. FREDERICK HERMAN
College of William & Mary
Norfolk, Virginia

Visual Journey Through India

Shadows from India. *Roderick Cameron. The British Book Centre, Inc., 122 E. 55 St., New York 22, N. Y., 1959. 214 pp., 199 plates. $12.50*

India, land of many cultures, is revealed in a large, handsome book of Roderick Cameron's recent photographs. This lavish pictorial treat spans the time from the ancient cave temples of the 7th and 8th Centuries to the more recent British-inspired architecture. Divided into five sections—Ancient India, Mogul India, Rajput India, British India, and Kashmir—the photographs comprise a history of India and its peoples, reflecting the influence of various foreign conquerors on the religion, way of living, and esthetics.

Perhaps the most fascinating illustrations of Ancient India are the ornate statues and carvings that surround the temples. The total effect of this detailed sculpture/architecture, as in the clustered temples of Bhubaneswar (described by Cameron as "cylindrical fungi") or in the temple of Konarak (built as a chariot riding on 24 giant wheels) is an overwhelming experience. Equally impressive from their early Hindu period is the simple beauty in the faces of the statues —reflecting the same stylized refinement as early Egyptian and Greek art.

Continued on page 244

FOR THE NEW **HARRIS TRUST BUILDING, CHICAGO, ILLINOIS**

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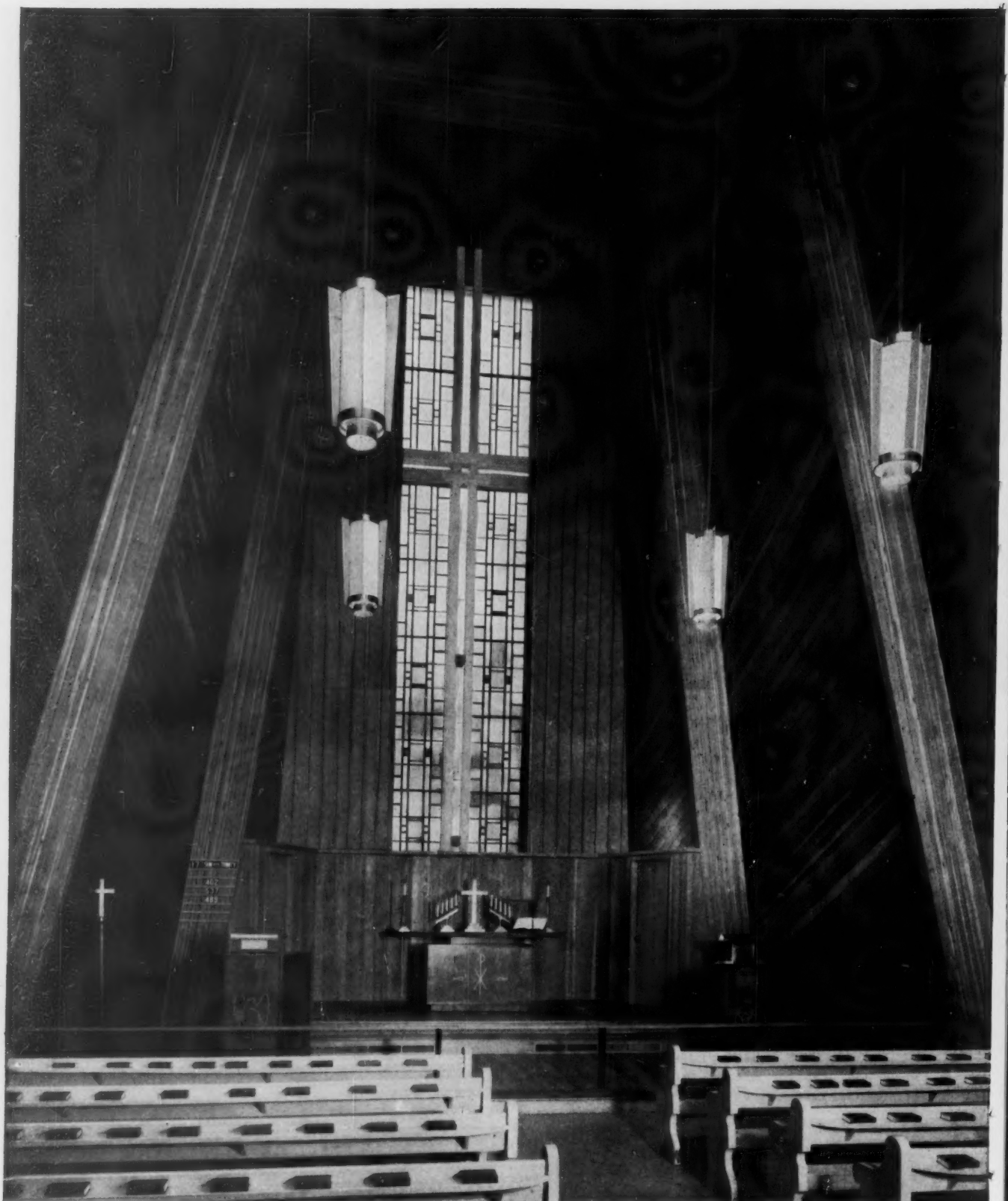

Allowing wood to function structurally *and* decoratively helped realize significant economies in the construction of this modern church. These dramatic supporting members are 2x6's over laminated arches. Sargent, Webster, Crenshaw and Folley, architects.

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The natural beauty of weathered wood helps wed this house to its site, harmonize with masonry and painted surfaces. Battens create a strong design line. Ernest Born, architect.

Wood's beauty goes to the very heart of a design problem, because it rests on a strong foundation of structural integrity. When you designate wood, you have a material that functions on two levels . . . structural and decorative . . . *simultaneously*. Any material that can perform this double duty is the welcome ally of today's inflation-harassed architect!

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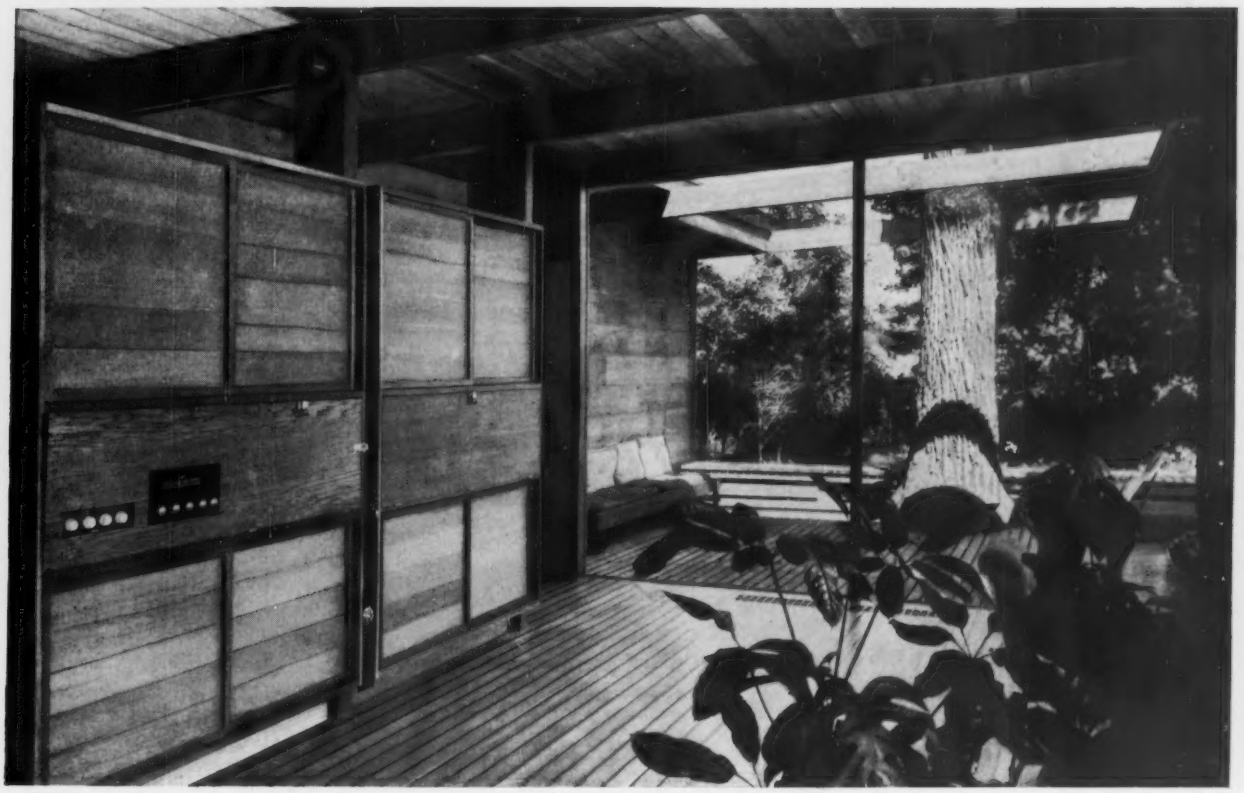

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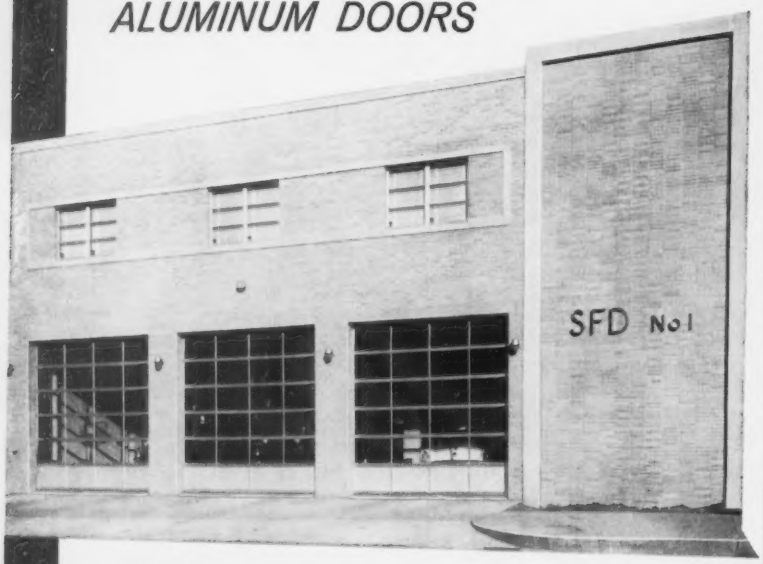

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Continued from page 240

The architectural style of Mogul India changes to slightly more disciplined shapes; and the decoration, in keeping with the religion, eliminates human form and turns mostly to geometric and floral design. But the Hindu's exquisite attention to detail and love of ornate beauty are still present. One marvels at the skill in the painstaking arts of carving and inlay, as seen in the marble and stone screens, so delicately carved as to appear almost weightless, and in the marble, stone, and glass-inlaid panels of building façades and interior surfaces.

Rajput India is not a period in time, but an area of India, Rajasthan. Here we see the flamboyance of early Hindu India and also the exquisite marble and stone carving of Mogul India. A fascinating group of shapes, which are the Jai Singh's observatory, look as modern in form as any architectural expressions of today. Also included are photographs of the market place; even in stacking their wares the Indians express the same rhythmic arrangement seen in their architecture.

In the British section of the book, though Cameron claims that some of the finest of British architecture is represented, the buildings are actually from two other cultures, transported there by the British (many of the large, imposing buildings are Greek or Roman in derivation). Some of these are very handsome, and blend well into the vivid heterogeneous picture of India. But added to this foreign style are elements that can only be Indian, as, for example, the elephants worked into the entrance of the former Viceroy House. It would have been fortunate if some more recent architecture of Western influence, such as Le Corbusier's work in Chandigarh and Edward Stone's Embassy in New Delhi, could have been included.

The final section, on Kashmir, is a glimpse into a fairyland. Kashmir is reached from the plains of India by ascending a long treacherous road through the snowy Himalayas, finally emerging through a tunnel pass to see the beautiful valley of Kashmir below. It is a romantic blend of nature and architecture from the most picturesque and quaint to some of India's showiest—as in the royal Mogul gardens, the Nishat Bagh and Shalimar Bagh.

Cameron's short introductory sections and captions to the photographs are interesting, adding more, however, to a general than a specific enlightenment. I wished for more factual information:

Continued on page 246

Just Published **The definitive work on a great originator . . .**

THE DYMAXION WORLD OF BUCKMINSTER FULLER

by ROBERT MARKS

HERE IS A FASCINATING study of the life and work of R. Buckminster Fuller—one of the most original and controversial men of our time. Since their first meeting some 18 years ago, Robert Marks has been an enthusiastic advocate and interpreter of Fuller's structural concepts. In this book he explains even the most complex of Fuller's ideas in a way that makes them accessible to all readers.

Way back in 1938 another originator, Frank Lloyd Wright, addressed Fuller as "the most sensible man in New York." In the delineation of his subject's life and philosophy, Mr. Marks reveals a man whose foresight and energy would naturally gain the attention and respect of other great innovators.

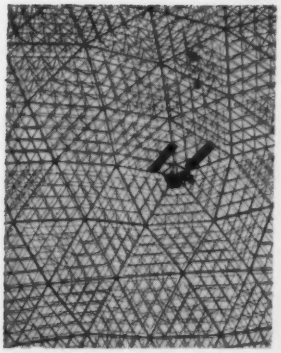
When the book's narrative moves from the man to his work, it takes the reader on the most complete tour of the Dymaxion world ever devised. Included are all the provocative Dymaxion projects that were 25 years ahead of their time—4D house, deployment units and transports, as well as Fuller's more recent work on Geodesic domes and space frames. The book also reveals the "total design" principles behind all these highly original concepts.

In addition, the pattern of thinking which evolved a system of geometry—Energetic and Synergetic—and a new system of map-making, is brilliantly analyzed.

The book is splendidly illustrated with over 350 fully captioned photographs and drawings that graphically depict the plans and structures, the today and tomorrow in Mr. Fuller's Dymaxion world.

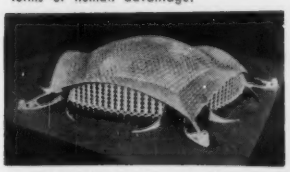
A major portion of the illustrations appear in their own sections. Here are the topics of these sections, many of which are several pages each.

ILLUSTRATION SECTIONS: Astor Plane; Stockade System; Multiple-Deck 4D House: Air Ocean World; Dymaxion House; Dymaxion Bathroom; Dymaxion Transport; Mechanical Wing; Dymaxion Deployment Unit; Dymaxion Dwelling Machine; Synergetic-Energetic Geometry; Maps and Charts; Tensegrity; Octet Truss; Minor Inventions; Autonomous Package; Geodesic Invention and Development; Skybreak Dwellings; Ford Dome; Seedpod Foldable Geodesics; U. S. Marine Corps Geodesics; Radomes; Paperboard Domes.



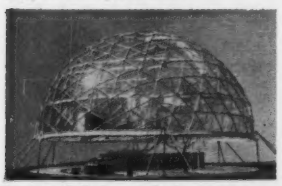
The bridge to this world of patterned abundance is what Fuller calls "Comprehensive Design." The book reviews this kind of design and what it means in terms of human advantage.

The book interprets the man responsible for the dymaxion world: his philosophy, background, and significance.

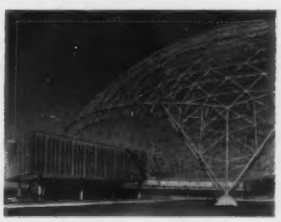


Thoroughly depicts the most famous of Fuller's creations, the dome. Includes those used by concert halls, sports palaces, industry, agriculture, banks, societies, to name just a few.

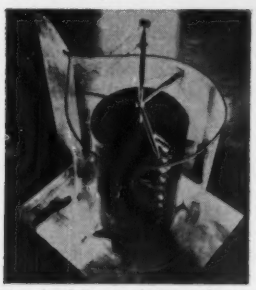
Includes all building types—their uses, design, materials, methods of construction, etc.



Presents Fuller's prophecies—transparent domes that cover entire cities for climate control; submarine islands; temporary, disposable dwellings.



Provides an incomparable visual record from earliest designs to current projects under construction.



Explains the Fuller vocabulary with pictorial examples: energetic-synergetic, tensegrity, geodesic, dymaxion, dwelling machine, octet truss, and 4D.

Covers the entire gamut of Fuller achievements—buildings, transports, geometry, cartography, deployment units, and many others.

Provides a complete, visual record of Fuller's work . . .
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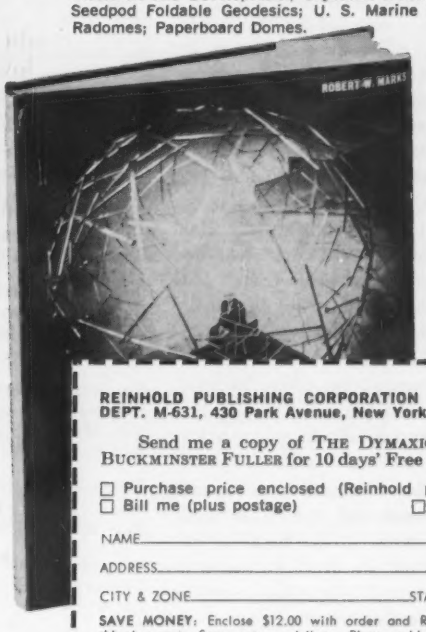

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Continued from page 244

dates, locations, sizes of buildings, and ornaments. A full-page illustrated map of India and a short chart of architectural history would have been helpful in trying to "place" the architectural examples. But the addition of this material might have necessitated a reduction in the almost full-page size of the photographs and thus a loss in the true importance of this fine book. Its real value is as an over-all view of Indian architecture — a sort of kaleidoscopic visual journey which we are privileged to make through the sensitive lens of Roderick Cameron.

ADELAIDE LEWIS
Greenwich, Conn.

For the Non-Professional

A History of Modern Architecture. *Jürgen Joedicke. Translated by James C. Palmes. Frederick A. Praeger, Inc., 64 University Pl., New York 3, N. Y., 1959, 243 pp., illus. $10*

To do justice to this publication is a difficult task, since one does not see clearly for which audience it is destined. Originally published in Germany, written by a German professor and practicing architect, and excellently translated by James C. Palmes, it may convey insights to a continental public—insights that are certainly not new to American architects or to those who are interested non-professionally in architecture of today.

The examples selected for the successive phases of the modern movement are all well known; any reader of architectural periodicals and even of general magazines has already become too familiar with them. From Gropius's Fagus Werke and Otto Wagner's Vienna Post Office to Le Corbusier's Villa in Garches and Frank Lloyd Wright's Bear Run, from Rietveld's houses in Utrecht and Oscar Niemeyer's and Lucio Costa's Ministry of Education in Rio de Janeiro to Nervi's Exhibition Hall in Turin and Saarinen's General Motors Center—we have seen them all too often. In scholarly works of the last years (by Giedion, Pevsner, Whittick, Hitchcock, and Kidder Smith), and still more frequently in innumerable publications about individual countries and individual architects, these examples have been analyzed and interpreted. Dr. Joedicke's explanations of structural principles, spatial relations, or architectural elements are definitely second-hand and offer no new ideas.

Many other basic problems, such as the relationship between individual buildings and city planning, are not even touched. No subjective opinion is uttered, no preferences formulated. The historical introduction, "The Age of the Pioneers," from Paxton's Crystal Palace in London to the Chicago School, from l'Art Nouveau and the Dutch Stijl movement to the first structures of Frank Lloyd Wright, is too brief and too general to clarify the inner relationships among the various phases of the beginnings of our era and their sometimes contradictory tendencies.

All this does not seem to invite the professional reader. But for a larger audience of interested *laymen* Joedicke's book has its merits. It is a condensed catalog and reference book for the architectural development during the last half century. The great number of illustrations, excellently printed and very well laid out, will help the reader find his way quickly to the necessary information.

PAUL ZUCKER
New York, N. Y.

Books Received

This Is Japan: 1960. The Asahi Shimbun, Yurakucho, Chiyoda-ku, Tokyo, Japan, 1960. 398 pp., illus. $6.50 ($7.25 in wooden box)

Creative Playgrounds and Recreation Centers. Alfred Ledermann and Alfred Trachsel. Frederick A. Praeger, Inc., 15 W. 47 St., New York 36, N. Y., 1959. 176 pp., illus. $12.50

Offices. Edited by Lois Wagner Green. Whitney Library of Design, 18 E. 50 St., New York 22, N. Y., 1959. 163 pp., illus. $12.50

Our Housing Jungle—and Your Pocketbook. Oscar H. Steiner. University Publishers, Inc., 59 E. 54 St., New York 22, N. Y., 1959. 180 pp., illus. $3.95

Operation School Burning. Official Report on a Series of School Fire Tests by Los Angeles Fire Department, 1959. National Fire Protection Association International, 60 Batterymarch St., Boston 10, Mass., 1959. 269 pp., graphs. $4.75

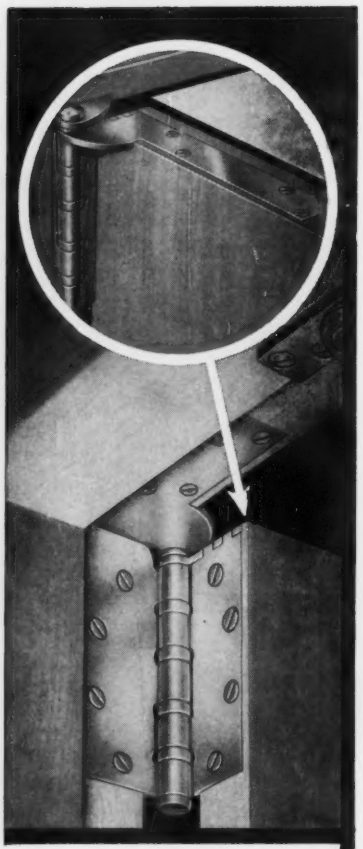
Doorway To Brasilia. A Magalhaes and E. Feldman. Distributed by George Wittenborn, Inc., 1018 Madison Ave., New York 21, N. Y., 1959. 64 pp., illus. $12.50

An Introduction to the Dynamics of Framed Structures. Grover L. Rogers. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y., 1959. 355 pp. $10.25

Fabritecture. Union of Fine Art and Industry. Pageant Press, Inc., 101 Fifth Ave., New York 3, N. Y., 1959. 139 pp., $3.

American Building Art: the Nineteenth Century. Carl W. Condit. Oxford University Press, 417 Fifth Ave., New York 16, N. Y., 1960. 370 pp., illus. $12.50

Office Building and Office Layout Planning. Kenneth H. Ripnen. McGraw-Hill Book Co., Inc., 330 W. 42 St., New York 36, N. Y., 1960. 182 pp., illus. $10



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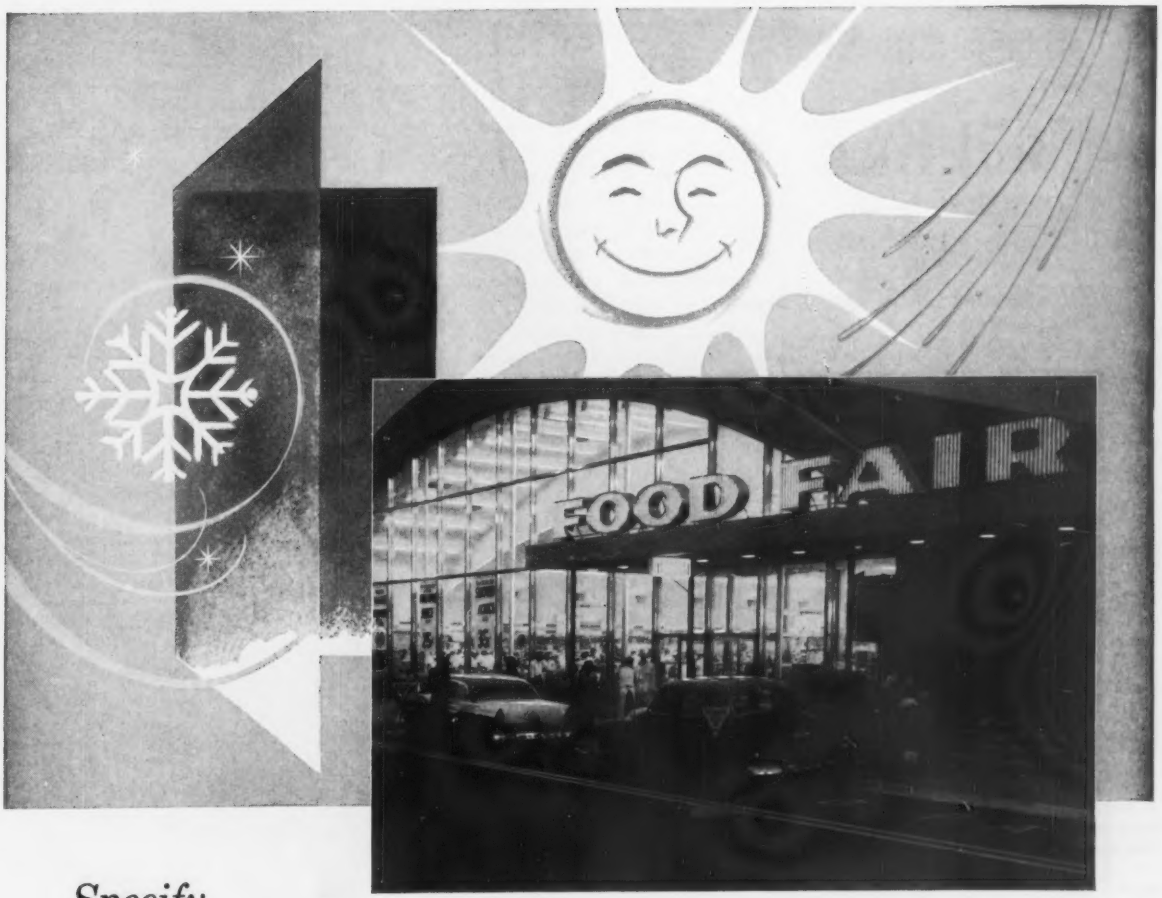

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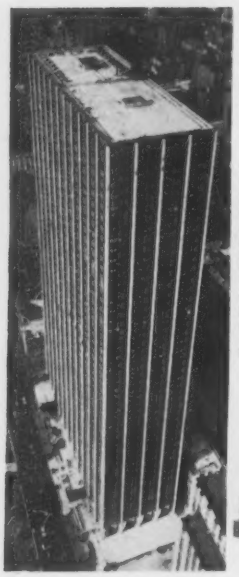

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NOTICES

The formation of a Decorative Products Sales Division was announced by the COLUMBUS COATED FABRICS CORPORATION. LUTHER LALENDORF will direct the new division as vice-president; WILLIAM BURGET, appointed Eastern sales manager; RICHARD T. PAUL, Western sales manager; HENRY A. YOUNG, product manager; and HOLLIS G. BELL, as director of merchandising services.

Merger

The merger of VICTOR CHEMICAL WORKS with STAUFFER CHEMICAL COMPANY has become effective. VICTOR will operate as a separate division, with the same officers and organization.

New Sales Divisions

REYNOLDS METALS COMPANY announces the creation of 13 divisional sales manager positions, eleven of which are in Atlanta, Chicago, Detroit, Cleveland, Pittsburgh, Minneapolis, Dallas, Kansas City, Los Angeles, San Francisco, Camden, and St. Louis. To accommodate the fast growing number of distributors of aluminum building products, PHILLIP C. KOBER, was appointed to the newly-created post of Distributor-Co-ordinator of architectural and building products.

Name Changes

BRENNER & ARNOLD, Architects, 92 W. Lynwood, Phoenix, Ariz. Formerly, JOHN BRENNER, MCINTIRE & ARNOLD.

THOMAS S. GEORGE, VICTOR W. BUHR, and WILLIAM B. MILES, JR., principals in firm of GEORGE, MILES & BUHR, Architects-Engineers, 106 W. Main St., Salisbury, Md. Formerly, VICTOR W. BUHR ASSOCIATES.

ROBERT W. TALLEY, HAL WEATHERFORD, and E. J. REMPELAKIS, principals in the firm of ROBERT W. TALLEY & ASSOCIATES, Architects, 805 Lovett Blvd., Houston 6, Texas. Formerly, ROBERT W. TALLEY.

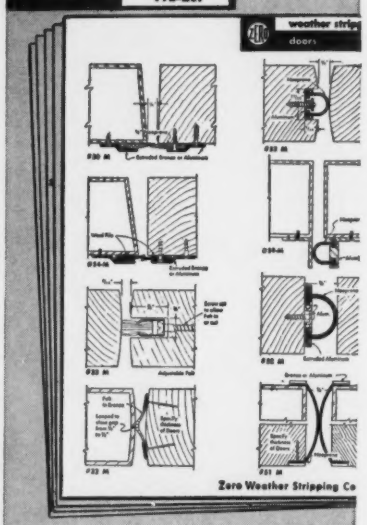
P/A Congratulates . . .

DON L. HOLMES, appointed manager of newly-formed Product Information Bureau of THE FLINTKOTE COMPANY. He will continue as advertising manager for industrial products.

EARL F. BENNETT, appointed to newly-created post of manager of architectural sales at KOPPERS COMPANY, INC. He will

ZERO

SEE OUR CATALOG IN SWEET'S ARCHITECTURAL FILE OR WRITE FOR COPY 19b-Zer



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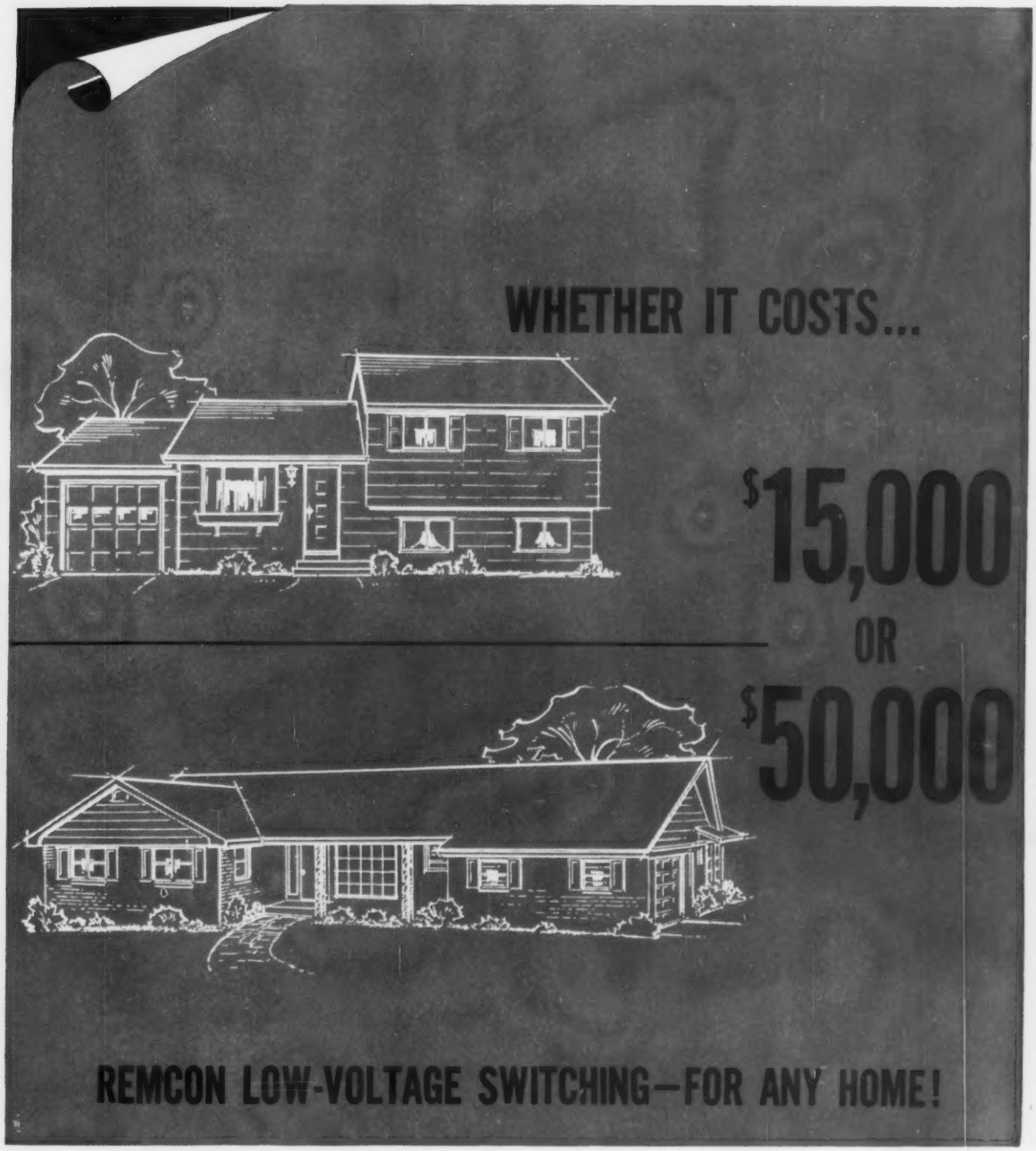

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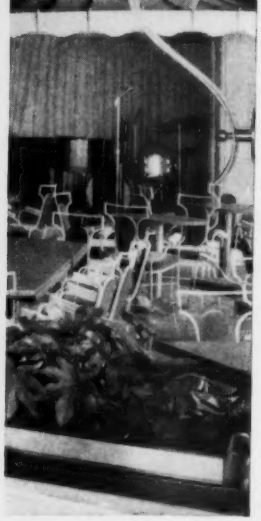

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BUILDING PRODUCTS

Continued from page 248

maintain his headquarters in the Pittsburgh general offices.

HAROLD SILER and JOHN S. FRIZZELL, made vice-presidents at PITTSBURGH REFLECTOR COMPANY. In their new positions, SILER will direct all sales activities and FRIZZELL will direct all of the company's engineering and sales promotion.

A. WILLIAM FRASER, elected vice-president and general sales manager at WORTHINGTON CORPORATION.

New Headquarters

In a move to provide greater centralization of activity and dissemination of information to the industry, THE PRESTRESSED CONCRETE INSTITUTE has established new headquarters at 205 W. Wacker Drive, Chicago, Ill.

New Departments

Henceforth all company sales, technical design, and promotional activity in the monumental, commercial, industrial, and residential construction industries will be centered in the new Building Product Sales Organization at ALUMINUM COMPANY OF AMERICA. M. C. SCHOETZ, with the title of manager of building product sales, will direct the new department.

In order to supervise and co-ordinate the activities of its architectural consultants located throughout the country, NATIONAL GYPSUM COMPANY has created an Architectural Service Department and named DAVID L. SHANK as manager of the new department.

New Addresses

BRICKER & BUSBY, Architects-Engineers, 3201 N. Third St., Phoenix, Ariz.

FRED S. DUBIN ASSOCIATES, Consulting Engineers, 7 E. 47 St., New York, N.Y.

MILTON SCHWARTZ & ASSOCIATES, 1721 Walnut St., Philadelphia, Pa.

New Firms

MARCEL BEAUDIN, Architect, 18 N. Main St., Barre, Vt.

B. CLYDE COHEN, Architect, 444 Market St., Rm 512, San Francisco 11, Calif.

MARION V. DORN and LOUIS FISCHER, principals in firm of DORN & FISCHER, Designers, 8 E. 54 St., New York, N. Y.

WILLIAM S. KAPLAN, Consulting Structural Engineer, 268 Market St., San Francisco 11, Calif.

WILLIAM S. PATTISON, Architect, Trevi Bldg., Surfside, Fla.

New Partners, Associates

C. EUGENE ASBURY, made partner in firm of LUNDEEN & HILFINGER, Architects-Engineers, Bloomington, Ill.

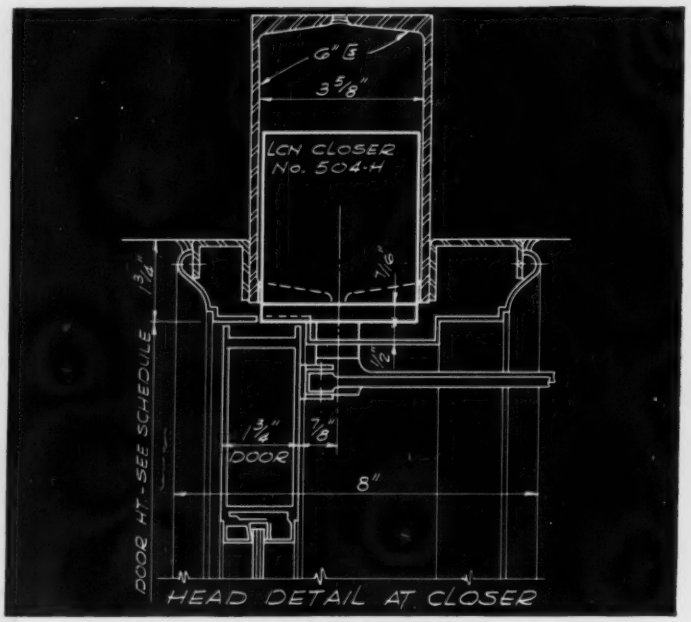
E. PER SORENSEN, made an associate partner in firm of TIPPETTS, ABBETT, MCCARTHY & STRATTON, Architects-Engineers, New York, N. Y.

CARL THALLER, named an associate of firm of SAMBORN, STEKETEE & ASSOCIATES, OTIS & EVANS, Architects-Consulting Engineers, Toledo, Ohio.

NATHANIEL W. SAMPLE and ROGER E. MCMULLIN, made partners; ROBERT C. KRAFT, JEROME J. MULLINS, GUNARD HANS, and WALKER L. PATTON made associates in firm of WEILER & STRANG & ASSOCIATES, Architects, Madison, Wis.

Elections, Appointments

HENRY WILLIAM RUIFROK, joins staff of HARLEY, ELLINGTON & DAY, INC., Architects-Engineers, Detroit, as chief of architectural department.



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for LCN Overhead Concealed Door Closer Installation Shown on Opposite Page

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Construction Details on Opposite Page

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THE STANLEY-CARTER COMPANY-Prime Mechanical Contractor Cobo Hall, Detroit
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P/A JOBS AND MEN

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ARCHITECT—We need a young architect with well rounded training and experience, capable of working with others or handling complete job. Permanent position. Small office. Friendly associates. Varied and interesting work. Nice community. Pleasant and fascinating country. Send resume, snap shot, sample drawings and present salary. Oberwarth & Livingston, Architects, 323 Shelby Street, Frankfort, Kentucky.

ARCHITECTS—Wanted to fill positions of Senior Architect with the New York State Public Works Department in Albany, N. Y. $7818 to $9408 in five annual increases. Requires License to practice as registered architect in New York State, or state or U. S. territory of candidate's residence or business, plus two years of professional architectural experience involving preparation and/or review of large and complex building plans and designs. For detailed examination announcements and applications write to Recruitment Unit, Box 31, New York State Department of Civil Service, Albany 1, N. Y.

ARCHITECTS, DESIGNERS, SPECIFICATION WRITERS, AND ARCHITECTURAL DRAFTSMEN—Immediate openings for men with experience; excellent working conditions in midwest with leading Architect-Engineer firm. State age, experience, references, education, marital status, availability, salary expected to Box 929, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DESIGNERS AND DRAFTSMEN—Excellent opportunity for permanent affiliation with long-established but progressive architectural firm specializing in contemporary architecture, with emphasis on school design. Growing backlog assures long-range program. A minimum of three years experience in architectural work required. Unusually congenial working conditions and associates. Complete modern offices with air-conditioning. Group hospitalization, salary continuance plan and other benefits. Please send resume of education and experience, stating requirements and availability, also snapshot and references. The firm of Edmund Geo. Good, Jr., Registered Architects, 904 North Second Street, Harrisburg, Pennsylvania.

DRAFTSMEN—Must have heavy experience in detailing sheet metal duct layout for all types of commercial and industrial work. Steady employment $4.50 per hour. 35 hour week, double time for overtime, welfare, pension, vacation benefits. Box PA 208, 125 W. 41st Street, New York, N. Y.

ENGINEERS—ELECTRICAL OR MECHANICAL—with 3 or more years experience in electrical or mechanical design for buildings, including: Electrical—lighting, distribution, wiring, etc. Mechanical-heating, air-conditioning, plumbing, etc. Permanent employment with well-established mid-western consulting firm. Write Box 930, PROGRESSIVE ARCHITECTURE, giving personal resume and required salary.

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SITUATIONS WANTED

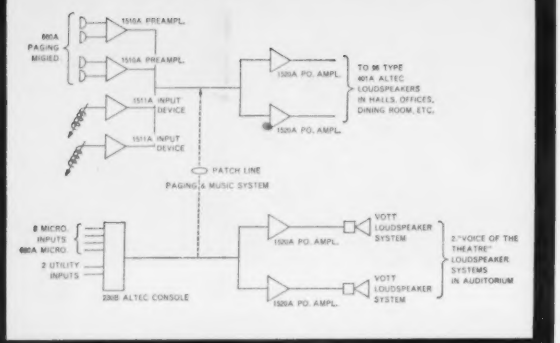
ARCHITECT—Age 31, family, M. Arch. degree, eight years experience including design, working drawings, supervision and teaching; desires responsible position with small or medium size firm. Will furnish complete resume on request. Box 932 PROGRESSIVE ARCHITECTURE.

ARCHITECT—A.I.A. Excellent training, registered by examination. 10 years experience in all phases of architectural practice, seeking administrative position of responsibility in progressive firm with opportunity to advance to partnership or associateship. 32, married. Resume and references upon request. Box 945, PROGRESSIVE ARCHITECTURE.

ARCHITECT—Executive, Registered Architect and Registered Professional Engineer in Illinois. Proven record of ability to take charge and produce for you. 16 years as office manager, project manager of diversified

Continued on page 260

Ford Staff Building Sound Engineers* *specified* ALTEC



An ALTEC paging system which employs 96 loudspeakers carries messages and music throughout the Ford Motor Company staff building near Detroit. For the auditorium, 2 of ALTEC's famous "Voice of the Theatre" loudspeakers were specified. An ALTEC-engineered sound system was first choice for this fine building for many reasons—pure reproduction, dependable service under all conditions, longer life, ease of installation and service.

These are the reasons you'll find ALTEC commercial sound systems in hundreds of commercial and civic buildings, hospitals, churches and shopping centers everywhere. On your next project, consult any of the hundreds of ALTEC engineer-consultant contractors at no cost or obligation. He can supply over 100 different sound components or design a complete system according to your specific requirements. Find him in the phone directory yellow pages or write ALTEC at either address below.

See our catalog in Sweet's Architectural File 34/AL; Industrial Construction File 17e/AL, 1960 Edition

*H. A. Roseberry & Sons, Inc., Detroit

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Unusual design for resisting seismic forces incorporates Penmetal lath

In the new John Hancock Insurance Company building in San Francisco, loads from exterior bearing walls are transmitted to setback columns by haunched concrete arches. Seismic and wind loads are distributed into the walls of the central core by the third floor, which acts as a stiff diaphragm.

Further to insure the building's shock integrity, the interior was finished wherever possible with plaster over Penmetal lath. This combination of metal lath and plaster has proved, time and again, to be the most resistant to cracks and crumbling even during earthquakes. Its strength stems from an inseparable key between the plaster and the steel mesh, giving walls or ceilings the characteristics of a solid slab of stone.

Penmetal partition studs, metal lath, beads and casings were used in the central core enclosing elevators and stairways. Because of their height, studs of Penmetal Structural Steel Framing, also with metal lath and plaster, were used to form the partitions for the mechanical floor at the top of the building.

Find out how Penmetal products can help you. Send for copies of catalog 624-L, *"Metal Lath and Plastering Accessories"* and catalog SS-33, *"Penmetal Structural Framing."*

JOHN HANCOCK BUILDING

ARCHITECTS: Skidmore, Owings & Merrill
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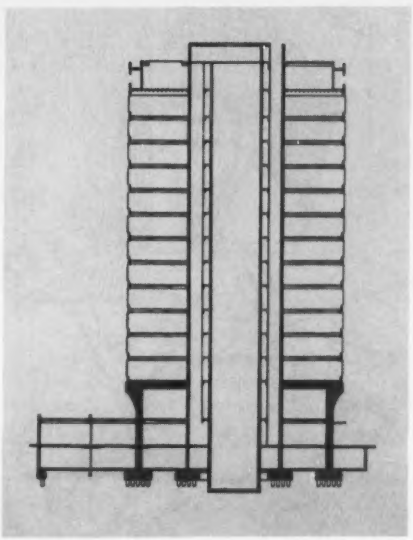
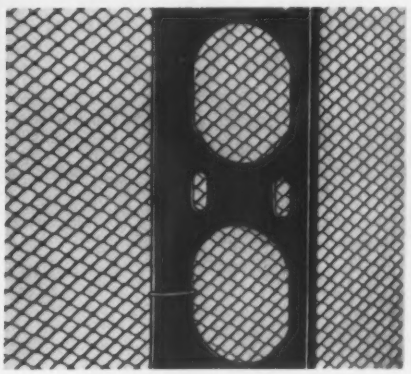
This diagram shows the unusual structural concept employed by the designers.





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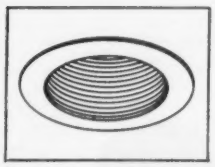

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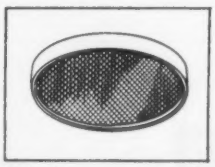

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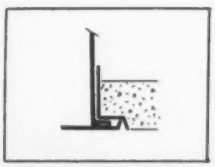

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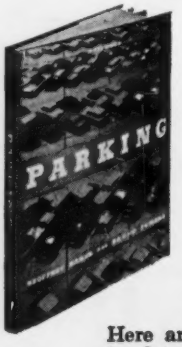

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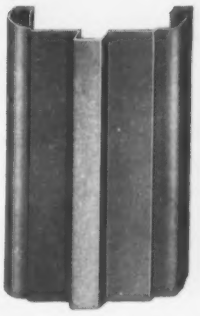

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P.S.

Cogito Ergo Sum. Descartes' brief summing up of his philosophy of personal existence in this phrase, "I think therefore I am," is scarcely defended or demonstrated today in actual practice. The fact that man exists because he thinks is difficult to prove in a life where time to think seems, itself, non-existent. Existentialism in its modern form, whether formal or pragmatic, relishes each moment of existence—but more often as a moment of activity than as a moment of consideration. Action painting has a vogue; the creative act begins with doing, rather than thinking. The busy architect spends all of his day accomplishing commissions; the architect who is not busy but wishes that he were, spends his working hours seeking commissions. Both are inclined to use off-hour time "relaxing" by idle conversation or playing bridge—or watching the television image of activity. The editor turns to his typewriter too seldom to express a thought which seems worth capturing, too often because the monthly deadline is pressing.

How often does anyone take time off to think, to recapitulate, to ask himself what he is really doing and why he is doing it; or to plan, to ask where he is going, why he is going there, where the busy days and evenings will lead? It seems to me that most of my friends in architecture and its related fields alternate work and rest, and that the rest is as much labor as the work. Vacations are busy times; travel becomes a matter of accomplishment ("We visited Russia last fall; they let us go to six cities, and I took 1000 pictures," a friend told me), very seldom, reflection. Evenings are times for additional work or short-term vacation-type activity or reading of the sort that dulls rather than stimulates the mind. "I don't have time to read," is a comment made to me over and over again; and the man who makes the remark almost always admits, if we pursue the matter, that he *does* read—he reads to "rest his mind," and that means reading matter that unstimulates thought.

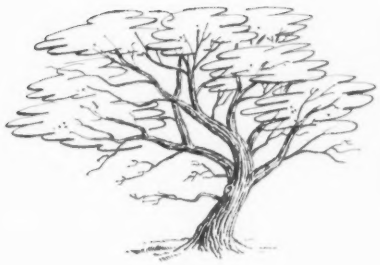
I have been thinking these pessimistic thoughts, and writing this sermon-type essay as a result, because I have recently heard of three examples of creative people taking time off to think. They are all architects—as different as can be in their design approaches—and their time-to-think methods were also different.

One is a partner in a quite prominent and much-published Mid-West firm. He feels that the new technologies, the new esthetics, the new possibilities in form and in space require much thought. "I want to stop and think for a while, for instance, about what a reinforced-concrete building should really be," he said to me recently. I paid particular attention because another well known architect had just been telling us of his *development* of a new concrete technology. Immediate action vs. contemplation before action: it will be interesting to see which one produces the most important concrete architecture in the long run.

The second time-to-think instance was an architect in a Southern state who has been conscientiously producing work to the best of his ability, but not to his satisfaction. He has a busy practice, but he is going to close up shop for a year; to study and travel. In his studies he wants to go back to theory; in his travels he wants to see things and *think* about them (perhaps not photograph them at all!). It is his fond hope that then he can go back to practice and make better use of his experience and pragmatic background.

The third example was of even more radical a move. A young Italian architect (who is also a painter of professional caliber) told me of three years that he took away from creative activity to re-examine premises. He had won an important competition; future success seemed assured. But he was not as sure of purpose or direction as of commissions. He went to Paris, did some writing and some lecturing (to collect thoughts), spent time with Sartre, Camus, Le Corbusier, Picasso—talking, discussing, thinking, not working—and finally went back to Italy to re-establish a practice which is again thriving. His work, it seems to me, is importantly imaginative.

We think, therefore we are. But that time to think is so elusive: I've got to run now to a committee meeting, where we will discuss an *action* program for a society I belong to.



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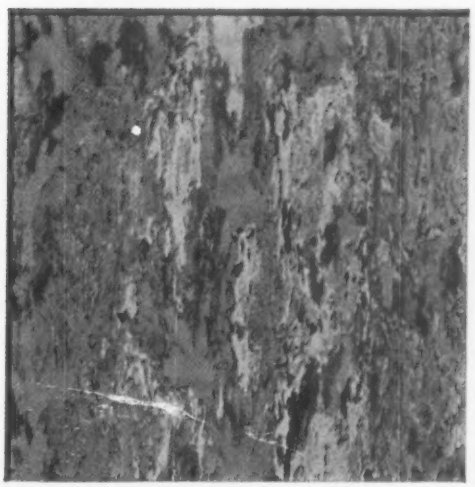

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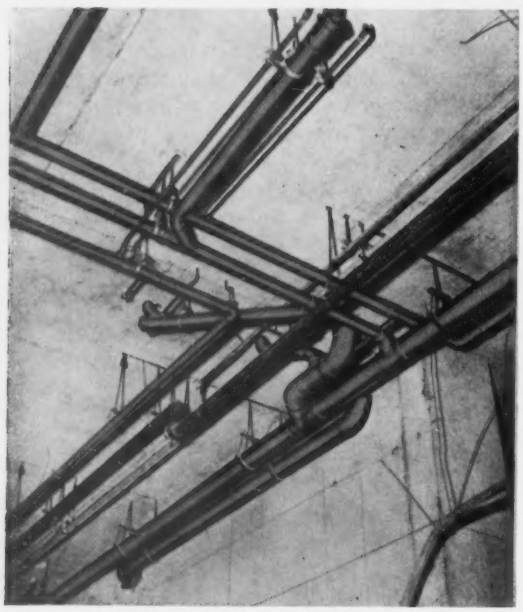

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